AIR CONDITIONING HEATING & REFRIGERATION NEWS
The Newspaper of the Industry
RESIDENTIAL — COMMERCIAL — INDUSTRIAL
December 1, 1958
Issued every Monday at 450 West Fort St., Detroit 26, Michigan
Established 1926
Member Associated Business Publications ABP ABC Audit Bureau of Circulations
Vol. 85, No. 14, Serial No. 1,549
Subscription Price, $6 Per Year (U. S. and Canada). Foreign: $10.00 Per Year.

Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Stories of the Week
Believe It or Not— A Frozen Navy!
Shall We Revive It?
Hail Dr. Schlumbohm
Woe Is a Serviceman, Again

Stories of the Week

Castaway from a wrecked ship was captured by cannibals. Each day at noon his arm was cut by a dagger—whereupon the natives would sip his blood. Exasperatedly he besought the king.

"Hurry up and eat me," he begged. "I'm getting sick and tired of being stuck for the luncheon drinks every day."

Here's a tale about an Organization Man who was approached by a volunteer solicitor for a Community Chest drive.

"I understand," glomped the volunteer, "that you haven't made any contribution to the Chest."

"Did you know they're about to foreclose the mortgage on the farm where my disabled father lives, and that my dear old mother needs an operation?" the exec countered.

"No," vouchsafed the volunteer fund raiser.

"And did you know that I have a brother who was so badly disfigured in the war that he must hide until he gets plastic surgery which I can't afford?"

"No," backtracked the volunteer.

"And did you know that my wife's brother is going to prison unless I can fork up a $10,000 shortage in his accounts at the bank by next Tuesday—and that if I can't do that my wife says she's going to shoot herself and our children because of the disgrace?"

"No," gasped the volunteer, edging out of the room.

"Well, then," dismissed the executive, "if I'm not giving any of *them* a dime, why should I contribute to the Community Chest?"

Believe It or Not— A Frozen Navy!

Nowadays we take for granted some of the more unusual applications of refrigeration—such as the freezing of earth to prevent cave-ins in mines and in the construction of big dams, or the economic removal of salt from sea water by freezing.

There is an unheralded appli-

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Delay Into '59 On Room Unit Tax Is 'Likely'

WASHINGTON, D. C.—Most recent indications which industry sources have been able to obtain from the Internal Revenue Service point to the possibility of an *announcement* of the effective date of a new excise tax ruling by Jan. 1, 1959, with a *fair chance* that the *effective date* may be no sooner than the start of the U. S. government's new fiscal year, July 1, 1959.

There is also the possibility that the IRS will make the effective date the same day as they announce the new ruling, and this, of course, could happen anytime.

The new ruling would broaden

(Concluded on Page 4, Col. 5)

Westinghouse Offers 3 Larger Packaged Units

STAUNTON, Va.—Three new packaged air conditioning units rated at 22, 25, and 30 tons have been introduced by Westinghouse Electric Corp.

These units expand the Westinghouse packaged air conditioner line for commercial applications to include eight models rated from 3 to 30 tons.

Major features of these new designs are application flexibility and compact size, the company said. The fan sections are shipped separately, permitting particular ease in handling and placing of the unit, it was pointed out.

"This separate fan section concept is an exclusive feature first introduced by Westinghouse six years ago," according to the announcement. "It provides six different options for mounting the fan section and means that any desired air flow

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FHA Compiles Minimum Property Standards Into Single Volume

WASHINGTON, D. C.—New Minimum Property Standards that builders must meet to satisfy Federal Housing Administration requirements have for the first time been compiled into a single volume, the Federal Housing Administration announced recently.

The new MPS are expected to go into effect next spring, possibly April 1, according to FHA Commissioner Norman P. Mason.

Standards set forth in the new MPS will replace those now contained in the Mechanical Engineering Bulletins on air conditioning and heating.

Although a copy of the new MPS was not available at press time, it was understood that standards for air conditioning are not significantly changed from ME-13A.

Mason said that the new MPS include nothing dramatic or revolutionary and are not intended to serve as a building code. They are based on three years' study by FHA technicians and recommendations by builders, architects, engineers,

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McDermott Honored at RSES Conclave; May Liberalize Rules on Heating Men

By Frank J. Versagi

COLUMBUS, Ohio — Moist eyes and deep emotion.

Unusual at a convention, but there they were.

In a unique display of affection and emotion, H. T. McDermott, international secretary of RSES, received five standing ovations, certificates, awards, and gifts during the course of the 21st annual meeting of the society. The meeting was also the silver anniversary of the Refrigeration Service Engineers Society.

Two of the spontaneous shows of affection came within three minutes of each other, at the presentations of a certificate of appreciation signed by present and past officers of RSES and of a hand-tooled leather bound scrapbook containing letters of congratulations and admiration from friends throughout the industry. Both presentations were made by the California Assn. of RSES.

The first standing ovation came at the completion of McDermott's inspiring secretarial report on the activities of the society for its first 25 years.

In what may prove to be a major decision, the delegates authorized the RSES board of directors to consider revising the organization's constitution to allow heating people to become full members of the service society. Presently, heating people can be associate members only.

The society was congratulated

(Concluded on Back Page, Col. 1)

Heating Men Seek Combined Board To End 'Discrimination' In Cooling Licenses

By C. Dale Mericle

GRAND RAPIDS, Mich. — Heating and refrigeration codes of the City of Grand Rapids will be administered by a single combined board if proposed changes in the governing ordinances are adopted by the city commission.

Passage of the amendment within 30 days is predicted by Frank E. Ederle, executive secretary of the Grand Rapids Heating & Air Conditioning Association, which has been the prime instigator of the proposal.

Although this move is perhaps a logical development of the tendency towards "intermarriage" between the heating and cooling industries at all levels because of the growth of residential air conditioning, there appear to be other and more immediate reasons for it.

Repeated failures of many heating contractors to pass the refrigeration examination required for a license to install air conditioning led to the belief by some of them that they

(Concluded on Page 9, Col. 1)

Mathes Bows Conditioner Lines for '59

FORT WORTH, Texas—The Mathes Co., Div. of Glen Alden Corp., recently presented its "much-improved" 1959 lines of room air conditioners, heat pumps, and residential-commercial central station equipment at its plant here.

The new line of room air conditioners and heat pumps is comprised of 20 models in capacities ranging from 1 hp. through 2½ hp.

In the 1-hp. size there are eight models providing cooling and four heat pump models. All but one of the latter also have supplementary heat. In the 1½-hp. size there are two conventional units and two heat pump models with supplementary heat. Also offered are one 2-hp. and one 2½-hp. conventional models and one 2-hp. and one 2½-hp. heat pump models with supplementary heat.

Features incorporated in all

(Concluded on Page 4, Col. 1)

NCRSA Members Urged To Become Real Experts

By George M. Hanning

MIAMI BEACH, Fla.—Being a qualified distributor—one who is an expert in all phases of getting a supermarket started in business and providing service—is the answer to the future of the commercial refrigeration distributor.

That was hammered home by almost every speaker who gained the podium at the 12th annual convention of the National Commercial Refrigerator Sales Association.

Nearly 150 distributors from all over the country gathered at the Golden Gate hotel here for the event.

Retiring President Harry Hattenbach set the theme in the keynote speech. He clarioned: "The future of the distributor

(Concluded on Page 21, Col. 1)

Detroit Area Reciprocal Council To Study Code

HIGHLAND PARK, Mich.—A newly-organized Reciprocal Refrigeration Council to smooth the process of reciprocal licensing in Detroit area communities, will meet Dec. 3 to discuss a proposed reciprocal refrigeration code.

The meeting will be held at 2 p.m. in the Highland Park city council chambers. Anyone representing an organization

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To Help Them Avoid Penalties

UA Sends Hiring Practices Guide Book To Local Unions With 5 Suggested Plans

WASHINGTON, D. C.—In an unprecedented move, the United Association has sent to all its local unions recommendations for revising existing hiring practices to bring them into compliance with the "drastic restrictions" imposed by recent decisions of the National Labor Relations Board.

The recommendations, contained in a 43-page booklet, were submitted as a guide to local unions in drafting legal hiring clauses in collective bargaining contracts with employers.

They were prepared by Martin F. O'Donoghue, general counsel for the UA, after consultation with attorneys for the various employer trade associations.

While the local unions, which exercise autonomy in the field of collective bargaining, may accept or reject the recommendations as they see fit, it was pointed out that existence of illegal hiring procedures, in contracts or by implicit agreement, may expose them to heavy monetary damages.

To safeguard its local unions from such penalties, the UA suggested five different hiring plans which, in the opinion of the union's counsel, would be held legal and in conformity with the NLRB's rulings in the Brown-Olds and Mountain Pacific decisions.

"These plans, all of which abandon the closed shop, traditional in the building trades, call for (1) a simple rotation system based on experience; (2) a rotation system based on experience plus an examination; (3) a non-exclusive job referral procedure, and two alternate forms of seniority provisions that may be used as a supplement to the first three plans," it was explained.

John Hellstrom Retires

LOUISVILLE, Ky.—After 33 years of leadership in the air filter and dust control industry, John Hellstrom, vice president of American Air Filter Co., retired recently.

Hellstrom was director of AAF's Products and Marketing Div., and manager of the American Air Div. (Louisville manufacturing division). He planned to establish residence in the San Francisco area.

How To Size and Install System

NWAHACA Announces Schedule for 1959 Series of Short Courses at Universities

CLEVELAND — "The most timely university 'short course' series in the history of the National Warm Air Heating & Air Conditioning Association" was announced by George Boeddener, managing director of the group.

The 1959 series of courses at 11 American universities will afford dealer-contractors an opportunity to "invest in the future of their business and reduce costs by learning the right and best way to size and install a system," Boeddener said.

"The whole attitude of the American homeowner and home buyer is going through a change," he stated. "Since the end of World War II, the majority of the people have wanted the least expensive—in order to buy a house at the lowest possible cost.

"But," Boeddener continued, "stirrings throughout the nation indicate that quality is now the dream, desire, and want of most families."

The short-course schedule is as follows:

Penn State university, University Park, Pa.—Jan. 21-24; Illinois Institute of Technology, Chicago—Feb. 2-5; Washington university, St. Louis—Feb. 2-5; Oklahoma State university, Stillwater—Feb. 3-6; North Carolina State college, Raleigh—Feb. 16-19.

University of Connecticut, Storrs—March 9-12; Purdue university, West Lafayette, Ind.—March 16-19; Syracuse university, Syracuse 2, N. Y.—March 30-31, April 1.

Michigan State university, East Lansing—April 1-4; University of Omaha, Omaha 1, Neb.—April 7-10; Northeastern university, Boston 15—May 11-14.

Curriculum of the 1959 series will encompass subjects affecting and of interest to manufacturers, wholesalers, architects, and bulders as well as the warm air heating and air conditioning dealer-contractors.

McIntire Elects Howe Chairman of Board, Beierlein President

LIVINGSTON, N. J.—At a recent meeting of the board of directors of The McIntire Co., manufacturer of driers, filters, and strainers, John C. Howe, Jr. was elected chairman of the board and will also continue as treasurer and chief financial officer.

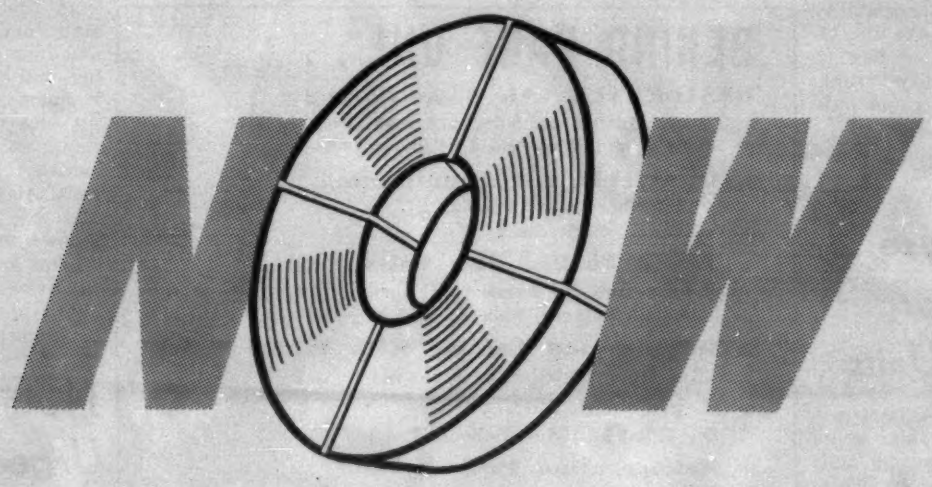
J. G. Beierlein was elected president, to succeed the late Lester S. Dunn. Cullen M. Cooper and Edward S. Chatlos were appointed vice presidents. S. M. Smith remains as secretary and Joseph P. Flynn as assistant secretary-treasurer.

Carrier Appoints Geo. L. Johnston

SYRACUSE, N. Y.—Appointment of George L. Johnston Co., Detroit, as distributor of Carrier Corp. air conditioning and heating equipment for Michigan has been announced by Russell Gray, Carrier vice president and general manager of the Unitary Equipment Div.

As major outlet for the air conditioning firm in the Michigan trading area, the new distributor will handle all Carrier product lines including automatic ice making equipment, room units, residential, commercial, and industrial equipment for both cooling and heating.

In Detroit, the Johnston firm announced that it has opened a branch sales office at 920 Monroe, Northwest, in Grand Rapids "so that we may give even better service to Carrier dealers."



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Mathes Air Conditioning Line for '59

(Concluded from Page 1, Col. 5)

the new models include extra high capacities, furniture-styled hardwood cabinets, and an all-aluminum outside housing designed to prevent rust, according to Robert B. Starnes, vice president and sales manager.

Mathes presented new year-round room air conditioners which will automatically change from heating to cooling, it was pointed out.

A new addition to the line is a unit to be installed through a wall section, featuring multi-speed fan control. It is available in 1 and 1½-hp. sizes for cooling only or heating and cooling. The unit is especially designed for use in homes, motels, hotel rooms, and offices, and is adaptable in remodeling of all types of construction "where air conditioning is desired and economy is needed," the company said.

Completing the showing was a display of the completely redesigned Mathes residential-commercial line of air conditioning and heat pump equipment.

Featured in the residential portion of the line were several new cooling and heat pump condensing units with new low silhouette, greater service accessibility, and greater protection by means of added rainproof louvering, it was stated.

Mathes exhibited several modifications and advancements in the line of heat pump equipment, according to the announcement.

Highlighting the residential-commercial line are newly-designed evaporator blower coil units for commercial installation without ductwork and featuring compactness, low silhouette to provide additional headroom, and the Mathes trademark on a panel of genuine, hand-rubbed mahogany immediately below the discharge air register, on the face of the blower unit, the company said.

THRU-the-wall model shown here is a new addition to the recently introduced Mathes air conditioning line.

HEAVY-Duty Deluxe room air conditioner is among the models in Mathes line for 1959.

Mathes offers once again this year air-cooled condensing units and heat pumps in capacities ranging from 2 through 10 tons. Evaporator blower coil units were shown in capacities ranging from 2 through 20 tons.

Outdoor (remote) units — models HAR and HAR-HP — are available in seven models.

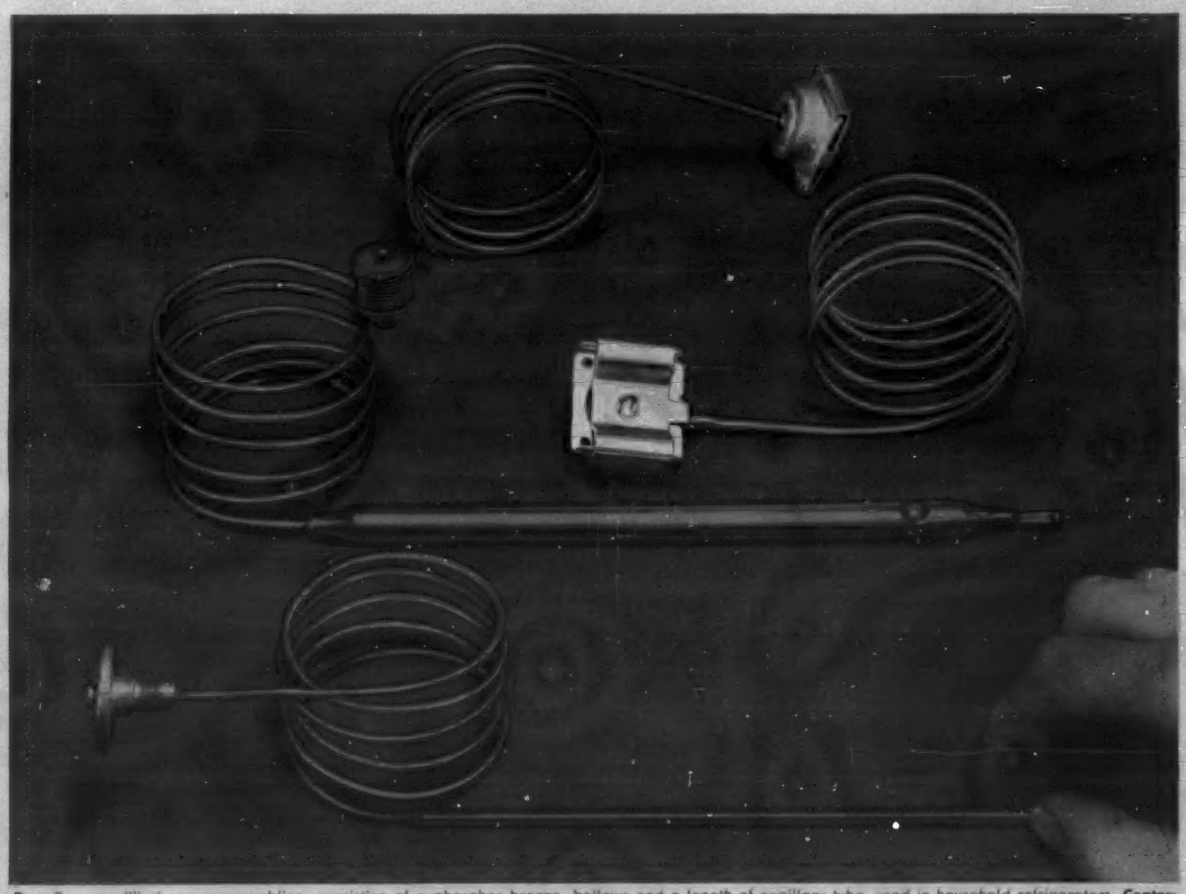
Indoor coil blower unit models HEB and VEB come in nine sizes and coil blower unit (plenum) models HEB-P and VEB-P in four sizes. Shipped for use as straight cooling units, they can be converted into heat pumps by applying an electrical panel adapter kit, it was pointed out. The adapter kit is a plug-in panel and requires no tools to install.

Also offered are four models of UDEB indoor coil blower units and models EU, ED, and EH evaporators providing up, down, or horizontal air flow.

Over 400 distributors and dealers from all over the country attended the meeting.

Albert A. List, president of List Industries Corp., principal stockholder in Glen Alden Corp., parent company of Mathes, was an honor guest and presented a welcome address.

Benjamin R. Ebersman, newly-elected president of Mathes, addressed the group concerning the broad policies of the company for the coming year. Presentation of the 1959 equipment and sales program was made by Starnes.



Top: Two gas-filled sensor assemblies, consisting of a phosphor bronze bellows and a length of capillary tube, used in household refrigerators. **Center:** a liquid-filled sensor assembly, with bellows and sensing bulb connected by capillary tube used in a gas space heater. **Bottom:** a Robertshaw-Bridgeport Diastat heat sensing unit with diaphragm and sensing bulb connected by capillary tube, used in electric range oven controls.

Temperature sensors require high, uniform quality in capillary and bulb tube at Robertshaw-Bridgeport

The temperature sensing elements made by Bridgeport Thermostat Division of Robertshaw-Fulton Controls Company provide a simple and accurate means of controlling temperatures in refrigeration, air conditioning, heating, and cooking equipment. Important parts of these elements are furnished by French Small Tube Division of the American Brass Company.

Robertshaw-Bridgeport can provide manufacturers of controls and appliances consistently accurate calibration and dependable operation over long periods of uninterrupted service, largely because of the close precision quality of French capillary tube and fabricated sensing bulbs. These specially fabricated tube products must be scrupulously clean, meet strict dimensional specifications, and be free from flaws that would cause faulty operation. Robertshaw-Bridgeport also looks to the supplier for creative technical services to help meet the ever-changing needs of its customers as new models and applications come up. The French Small Tube Division of The American Brass Company, specialists in bulb and capillary tubing, have been consistently meeting these requirements.

Quality Tube and Creative Technical Services. Whether you need capillary tube, restrictor tube, bulb and tube assemblies—in either copper or aluminum—the French Small Tube Division has specialists to help you find the most economical way to do a job—the experience and facilities to turn out the tubing you need. For further information or technical assistance, write: French Small Tube Division, The American Brass Company, Box 1031, Waterbury, Connecticut. 6894

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ANACONDA PRODUCTS FOR THE REFRIGERATION AND AIR-CONDITIONING INDUSTRY

Westinghouse--

(Concluded from Page 1, Col. 2)

pattern can be obtained, none of which requires any field modification. All models, including the 30-ton design, will easily pass through a 3-ft. doorway.

"All components of the entire unit, including fan motor and drive, are completely enclosed in a cabinet which is 'stipple' finished in charcoal and beige. The exterior panels can be quickly removed for service accessibility from the front of the unit, reducing floor space requirements.

"Close humidity and capacity control are obtained from multiple compressor operation. In addition, step-starting of fan and compressor motors and internal fusing are features incorporated to reduce installation costs.

"Another advantage of the large packaged air conditioners for commercial and industrial use is that complete air conditioning can be accomplished on an incremental basis and systems need not be oversized to allow for future plant additions."

Excise Tax--

(Concluded from Page 1, Col. 2)

the coverage of the 10% excise tax to cover all room air conditioners. At present, the tax applies only to units of less than 1-hp. capacity.

Both the Air-Conditioning & Refrigeration Institute and the room air conditioner section of National Electrical Manufacturers Association asked the IRS to postpone as long as possible the effective date of the new ruling. NEMA is also said to have asked that no advance notification of the effective date be made.

Jurisdictional Fight Has Cost Burt Mfg. $3-4 Million During Last Few Years, Senate Rackets Committee Hears

WASHINGTON, D. C. — The Senate rackets committee was told by a Burt Mfg. Co. executive that a jurisdictional fight between two AFL-CIO unions—waged largely through legal loopholes — cost his company three to four million dollars over the last few years.

F. C. Sawyer, executive vice president of the Akron, Ohio firm, charged that the Sheet Metal Workers Union had engaged in secondary boycott practices on a national scale.

He claimed the union has coerced or intimidated contractors and architects into a refusal to use Burt ventilating equipment, made by members of the United Steelworkers Union. The latter union has represented Burt workers since 1945.

Urging Congress to strengthen the Taft-Hartley Act to curb secondary boycotts, Sawyer said existing law is so full of loopholes that his lawyers doubt they can win satisfactory redress through the courts.

"It is terrifying to me," he declared, "to think that in this country a businessman can be so intimidated by a union that he will enter into a written agreement not to use a product which he thinks is best adapted for his business."

Two officials of the United Steelworkers gave testimony aiding Sawyer. And Sen. Carl T. Curtis (R., Neb.) accused the Sheet Metal Workers of a "brazen and cold-blooded" attempt to drive the company out of business.

However, William O. Frost, business manager of Sheet Metal Workers Local 70 in Akron, asserted that his union was only trying to protect its members. He denied it was trying to wrest away the collective bargaining contract Burt had with the Steelworkers.

Frost claimed that Burt paid substandard wages and that to protect the higher pay given his union members, the union was asking other employers to state in contracts that they would not use Burt equipment.

He said Burt employes got an average of about $2.10 an hour while workers in metal fabricating shops represented by his union received $3.54 an hour.

"Thus," he told the Senate committee, "it is apparent that Burt enjoys a tremendous competitive advantage because of its wage rates over union shops manufacturing or fabricating a similar line of sheet metal products."

How Small Business Investment Act Will Operate Is Topic of Meeting

NEW YORK CITY—The first public explanation of the Small Business Administration's plans for carrying out the Small Business Investment Act of 1958 will be presented at a special briefing session on the new law to be conducted by the American Management Association at the Savoy-Hilton here Dec. 1-2.

Several hundred individual and institutional investors interested in financing small enterprises are expected to attend. They will learn how investment in small business is to be encouraged under the act, and how they can take advantage of its provisions.

The two-day briefing will deal with the provisions of the law, with SBA's program for giving financial and other aid to state and local development corporations and to authorized small business investment companies that may be set up under the new act, with the tax and regulatory status of such companies, and with the opportunities and dangers of investment in small business.

3 MCAA Groups Consider Starting Bid Depositories

SAN FRANCISCO — Discussion indicated interest in forming three new bid depositories when local association officers of Mechanical Contractors Association of America met recently for four days in Williamsburg, Va.

MCAA Vice President Wm. P. Scott, Jr. of Oakland and Secretary Stewart Davis Smith of San Francisco attended from Northern California Association of MCAA.

Smith reported he was called on to describe operations of the Mechanical Contractors bid depository in San Francisco which has been functioning successfully several years.

MCAA associations in St. Louis, Minneapolis, and Detroit, reported they were interested in establishing bid depositories.

MCAA chapter in Memphis has operated a bid depository for several years. The depository is handled by the secretary, a contractor member of the chapter.

Purpose of the meeting, held every year at this time, is to exchange information about common problems.

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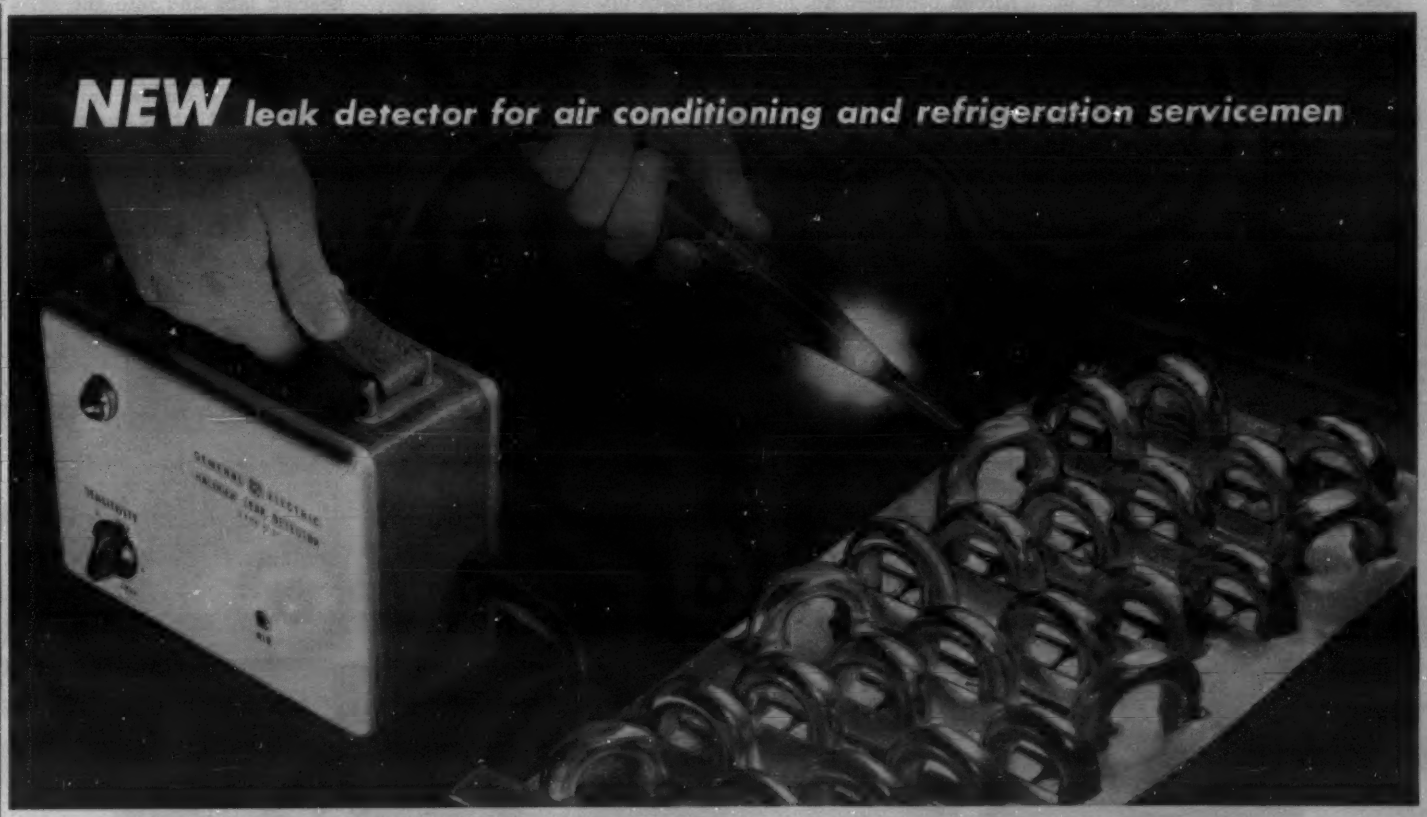


GENERAL ELECTRIC H-6 LEAK DETECTOR

Locates Leaks in a flash!

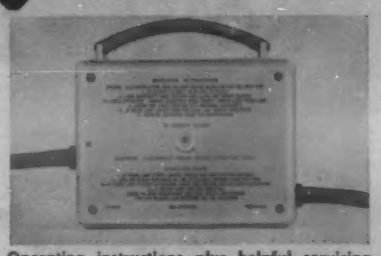
Now General Electric offers a new, low-cost, electronic leak detector that is sensitive, easy to use, and permits positive location of leaks in systems that contain Refrigerant gases such as Freon, Genetron, and Isotron. Designated the Type H-6, this leak detector utilizes a unique probe that actually lights up the moment it passes near a leak.

Designed especially for air conditioning and refrigeration servicemen, the portable H-6 is lightweight and features a wide range of sensitivity selection through the use of a single control dial. In addition, an automatic balance feature helps in locating leaks even when room air is contaminated with Refrigerants.

The easy-to-use H-6 leak detector is ready for operation 60 seconds after it is turned on. To test for leaks, you simply move the probe along seams or around joints. When the tip passes near a leak, the probe flashes. After locating a leak, the detector recovers in less than two seconds.

The faster, more reliable leak detection afforded by the H-6 can easily mean more service calls per day, greater customer satisfaction, and greater profits to you.

See and operate the new H-6 leak detector now on display at leading refrigeration supply houses throughout the country. You can also get more information by contacting your G-E Apparatus Sales Office or by writing for bulletin GEA-6827. General Electric Co., Section 585-78, Schenectady, N. Y.



Operating instructions plus helpful servicing hints are imprinted on the back of the leak detector control unit.

Attractive leather case is available and provides a convenient means of carrying equipment and accessories. The detector unit can remain in the case, even when in use.

Progress Is Our Most Important Product

GENERAL ELECTRIC

Dealer Insists on Adequate Insulation Before Installing System In Residence

HOUSTON, Texas — Aircon, Inc., a dealer here with an annual volume of $250,000, won't install central air conditioning in an existing house or building unless it is adequately insulated.

Douglas Montgomery, vice president of Aircon, says: "We don't want our equipment operating with anything less than full insulation because we know there's going to be trouble, inadequate or erratic cooling or sky-high electric bills, and we're the ones our customers will come looking for with fire in their eyes."

Aircon tries to sell a "comfort package" air conditioning along with thick mineral wool insulation in the ceiling and sidewalls. The firm sells 18 to 20 packages a year and never has had a complaint about high operating costs or poor cooling efficiency.

Aircon includes the cost of insulation in its bids without itemizing it. The proposals state that installation will include a certain thickness of insulation in the attic and (if possible) the sidewalls. The customer is told that the insulation adds a little to the cost of the job but pays for itself in three to five years.

Aircon considers adequate insulation to be at least 4 in. in ceilings, but preferably 6 in., with sidewalls filled to capacity with blown wool.

"We can refer our prospects to any number of satisfied customers who will vouch for the fact that our comfort packages do provide comfortable cooling economically," Montgomery notes. "We don't find it difficult to convince a prospect that the extra few dollars invested in insulation pays for itself quickly through lower electric bills."

Aircon's insulation work is done by Building Specialties, Inc., a Houston insulation contractor. The company bills Aircon and Aircon adds a small mark-up.

If the house or building is not too difficult to measure for insulation, or if a plan is available, Aircon supplies the insulation contractor with the necessary dimensions. If it's a complicated layout, the contractor is notified to come out and take his own measurements.

"When the customer is going to take care of the insulation himself, we'll usually install the air conditioning system, turn it on to check it out, and then disconnect it on some pretext or other until he gets the mineral wool installed. We want that insulation in the house before we let the owner use our equipment. Our past experiences have proved he's going to be disappointed without it."

With a comfort package, Aircon, a Carrier dealer, assumes responsibility for the insulation as well as the air conditioning system.

Heat Pump IS Here, Giordano Tells National Power Use Conference

BUFFALO — "It's time we stopped talking as though the heat pump will be something terrific *when it comes.*

"It's *here*—out of the engineering labs and into the sales field. For the first eight months of this year 16 heat pump manufacturers report the sales of almost 11,000 central units.

"Multiply that by ten and you approach the number of window heat pumps which will be on your lines before the year is out."

These forceful statements were voiced by Salvatore Giordano, chairman of the board and president of Fedders-Quigan Corp.

Speaking to the 5th National Power Use Conference recently, Giordano cited examples of extensive heat pump installations both below and above the Mason-Dixon line, to which he bids farewell as a limiting factor.

Typical installations: 500 central heat pumps in a Florida housing project — with houses selling at about $12,000; 30 homes in Lima, Ohio, where purchasers could get heat pumps for an additional $700—and 27 of the 30 did.

Giordano charged that, in spite of their promotional activities in some areas, the utility companies are not doing nearly as much as they can to help heat pump sales. He cited one "electric heat manual which devoted 22 lines to heat pumps."

He recalled that before the war, gas ranges outsold electric 15 to 1. "Now that ratio is 1 to 1; and it got that way by education and promotion.

"The gas people have got a heat pump now," Giordano warned, "and it is not inconceivable that they can get into this market and take a good share of it from electric utilities."

On the matter of costs, he stated that while some national magazines are carrying articles indicating that complete heat pump installations cost $2,500 to $3,000, Fedders-Quigan is offering a 3-hp. heat pump for about $1,200, installed.

"As for operating costs, why the hush-hush?" he asked. "In some areas the heat pump will be cheaper to operate than other methods of heating; in other areas it will be more expensive. But is this really important?

"If it were, I don't think you'd have the gas versus electric range fight at all today—it would still be wood versus coal," Giordano concluded.

. . . with the Round Oak ROCKET

AN ADVANCED, NEW LINE OF SECTIONAL GAS FURNACES
FEATURING EXTRA-LARGE BLOWER CAPACITY FOR AIR CONDITIONING

AIR APLENTY FOR TRUE SUMMER COMFORT—One glance at these ratings tells you that ROCKET has what it takes for effective summer cooling.

BTU INPUT	CFM AT 0.5" ESP
60,000	1200
85,000	1600
115,000	2000

Larger capacity units coming soon.

AN IMPROVED "JOB-PROVED" HEAT EXCHANGER—Here's a heat exchanger that's engineered for top efficiency. Sectional steel combustion chambers with "proved-on-the-job" airflow design are spaced on 4½" centers with 2¼" minimum clearance between sections to give ample air flow and high heat transfer. Improved, quiet-burning, ribbon type burner for high combustion efficiency.

CUSTOMER-BENEFIT FEATURES TO HELP YOU CLINCH SALES

- Pleasing copper tone cabinet handsomely trimmed with gleaming chrome.
- One thermostat for year-round comfort conditioning.
- Approved for close-clearance installations, such as closets, etc.
- Belt driven blower.
- Trouble-free Honeywell V-81 gas valve.
- Tried and proved by actual in-the-home installations.
- AGA approved.

. . . and the price is RIGHT. See your Round Oak Distributor. Or write us.

THE REDSTONE

. . . for builders who are interested in high quality at lower prices. Btu inputs are the same as the *Rocket* but CFM ratings are somewhat less. Furnished with Honeywell V-81 silent gas valve and a standard heating thermostat. Same copper tone finish but no chrome trim.

ROUND OAK COMPANY, INC.
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SEE YOUR ROUND OAK DISTRIBUTOR, YOUR ONE-STOP HEADQUARTERS, FOR HEATING, AIR CONDITIONING AND HEAT PUMP EQUIPMENT . . . ELECTRONIC AIR FILTERS . . . PIPE FITTINGS, REGISTERS AND GRILLES.

Home Improvement Products Show Set For New York, Feb. 4

NEW YORK CITY — The Home Improvement Products Show (HIPS) will be held at the New York Coliseum, Feb. 4-6, according to Robert Pomerance, managing director.

Buyers may pre-register and also secure hotel reservations by writing to the Home Improvement Products Show, 331 Madison Ave., New York, N. Y.

Motor Designed To End Starting Switch Faulting Resulting from Contamination

MILWAUKEE — A new single-phase, fractional horsepower motor design that features totally enclosed switch, capacitor, actuator, thermostat, and terminal panel has been announced recently by the Electric Motor Div. of A. O. Smith Corp. here.

The new design will end contamination-caused faulting of starting switches, which is the source of 34% of all single-phase motor failures, the company claimed.

The switch has been "scissor-action" designed to make it self-cleaning and end build-up of carbonization on switch points, the manufacturer said.

As soon as production permits, the new switch and life protection capsule will be added on blower motors in the 56 frame from ⅓ through 3 hp. It will also appear on NEMA general purpose, rigid base designs from ¼ through 1½ hp. in the 56 frame.

"On blower motors," the company explained, "we have found through actual experience that the starting switch, when it is exposed to the ventilating air stream through the motor, is contaminated by the foreign matter in this air stream to cause premature failure.

"In many applications of blower motors, the capacitor mounted on the side or on top of the main frame meets many mechanical interference problems.

"By mounting the capacitor in this cavity, we, of course, circumvent any problem formerly caused by having the capacitor on the side of the main frame.

"With the new type of construction, the resilient mounted motors may be changed to either ceiling or wall-mounted motors by merely rotating the barrel of the motor, with respect to the base, prior to mounting.

"With the internally constructed capacitor, this choice of mounting position is possible."

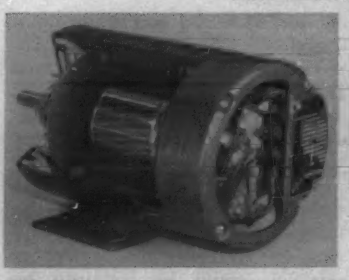
The company said the new concept was developed after five years of field and laboratory research and 20 million testing "starts."

Other features of the new motors include ball-bearing, rather than sleeve bearing, construction to take more radial thrust; a shorter distance between bearing centers providing better concentricity between rotor and stator and contributing to reduced noise levels; and a locked bearing arrangement eliminating end play for all practical purposes.

To overcome objections to noise by air conditioning and heating manufacturers, Smith has obtained ball bearings with an extra hone on both the internal and external races.

The bearings also have a closer tolerance between races to prevent any vibration or chattering noises caused by the balls having a little too much space to operate between the races.

Smith has also changed the ventilation system so air is pulled through rather than pushed through the motor, the firm pointed out.



CUTAWAY of totally enclosed starting switch package being offered by the Electric Motor Div., A. O. Smith Corp.

NEW CONCEPT in starting switches has been introduced as part of the development in single-phase electric motor design announced by A. O. Smith. The switch (left) and actuator shown are parts in the new totally encased dustproof capsule which provides life long protection for the starter switch—source of 34% of all single-phase motor failures.

Flexonics Research Activities Given Division Status

ELGIN, Ill. — Flexonics Research Laboratories, a new division of Flexonics Corp., has been established here, according to John F. P. Farrar, president.

The new division located at the company's Research and Development Center will provide testing and development service on a contract basis to industry and to developmental agencies of the government.

D. Wendell Fentress, vice president of research and development who has headed up Flexonics Research activity since 1937, has been assigned responsibility for the new division.

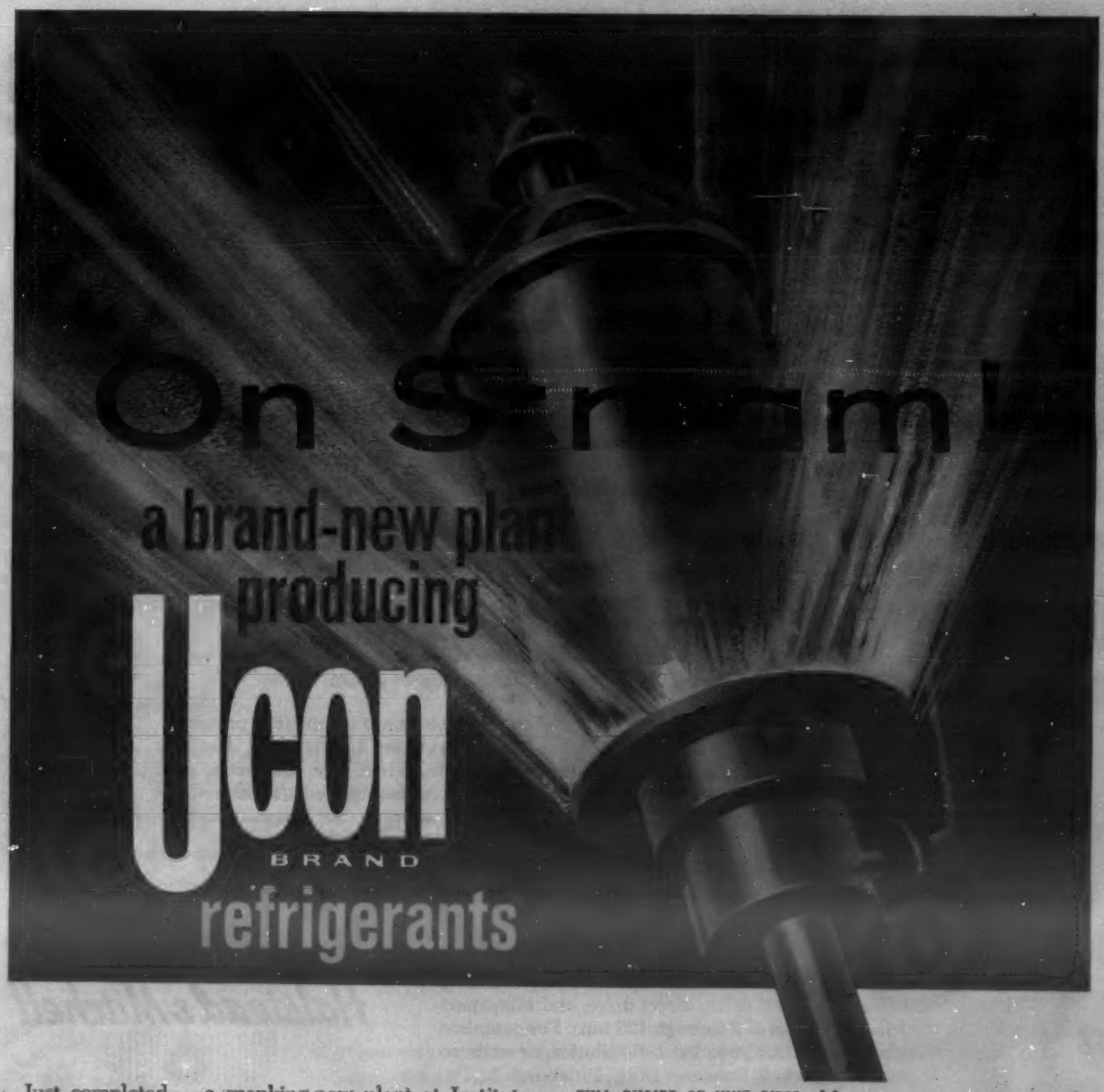
The laboratory staff, numbering nearly a hundred engineers and technicians, has up to now been engaged in the solution of engineering problems for Flexonics' eight plans and its Canadian subsidiary.

Fasco Expanding Distribution To Serve Small User

ROCHESTER, N. Y.—A year ago, Fasco Distributing Co., a division of Fasco Industries, Inc. here was established for the purpose of setting up a nation-wide distribution program which would make its line of shaded pole motors and blowers available to small users and to the replacement market at the local level, the company noted recently.

"Since then," it reported, "45 warehousing distributors and approximately 100 dealers have been established in major areas. The selective franchise plan places a limit of one warehouse distributor to a market area, each of which must maintain a complete inventory of shaded pole motors and/or blowers.

"About half of the 45 warehouse distributors are motor repair shops and nearly all of the 100 dealers are classified as service organizations. Within the next few months, the company expects to expand distribution into every major market area in the United States."



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UNSURPASSED QUALITY, meeting the strictest refrigeration and air conditioning industry standards for dryness and purity.

NEW PERSONALIZED SERVICE from technically-trained representatives—the UCON Refrigerants service force is the largest in the country.

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FULL CHOICE OF UNIT SIZES. Meet *your* quantity needs with UCON Refrigerants supplied in standard-sized units.

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Ucon BRAND refrigerants

These 5 UCON Brand Refrigerants will meet your refrigeration and air conditioning needs

UCON Refrigerant 11 Trichloromonofluoromethane
UCON Refrigerant 12 Dichlorodifluoromethane
UCON Refrigerant 22 Monochlorodifluoromethane
UCON Refrigerant 113 Trichlorotrifluoroethane
UCON Refrigerant 114 Dichlorotetrafluoroethane

UNION CARBIDE CHEMICALS COMPANY *Division of Union Carbide Corporation*

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

cation, however, of which few are aware, and it is a dilly. To wit:

Construction of sea-going aircraft carriers *out of ice!* Fantastic? Not at all. Sam Moncher of Bendix-Westinghouse told us about it recently.

During the Second World War this idea gained the serious attention of a prominent group of British and American scientists. This project was top secret, and had the code name of Habakkuk.

That said "fantasy" enjoyed a modicum of success can be attested by the fact that, in the summer of 1953, a 60-ft. pilot model ice-ship was launched in the waters of Jasper Lake, and completed trial runs promisingly.

Hull of this ship was formed from a special type of reinforced ice which was kept in solid state by a mechanical refrigeration system.

An obvious advantage of so unorthodox a vessel lies in the fact that holes in the hull caused by torpedoes or other missiles could be repaired by freezing almost as fast as they were made.

Since natural ice by itself wasn't deemed suitable material for the hull of a fighting ship, a way had to be found to improve its structural properties. This task was assigned to one of America's foremost experts in polymer chemistry, Dr. Herman F. Mark of the Polytechnic Institute of Brooklyn.

After six months of research during the latter part of 1941, he and Dr. W. P. Hohenstein developed an additive composed of wood pulp which, when added to water before freezing, created a reinforced ice which had a high strength-to-weight ratio.

Additionally, it demonstrated remarkable qualities of tensile and impact strength. This mixture of wood pulp and water, known as Pykrete, fashioned the ice hull of that pilot model ship which successfully was launched in 1943.

Shall We Revive It?

Operation Habakkuk was born out of desperation. At that moment in history the German submarine menace had taken a fearful toll of allied shipping. Even Churchill screamed for "inventors."

By the summer of 1943, however, our Navy had the situation well in hand, and the pressing need for aircraft carriers with self-regenerative hull properties no longer was felt to be *de jure* in Allied circles.

Like so many other projects conceived in desperation, Operation Habakkuk was dropped eventually, and the pilot ship was allowed to melt away. This was one ship where scrapping wasn't much of a problem.

Sam Moncher's provocative revelations moved "Dope" to consult the *Detroit News* librarian, who corroborated these facts, as follows:

Project S.S. Habakkuk (we were told) was begun in September, 1942, and abandoned the following year. It was inaugurated to meet a need for a practically indestructible aircraft carrier.

Dimensions: 2,000 ft. long, 300 ft. wide. Projected cost: about $70,000,000 per each. Power for propulsion was to be provided by electric motors. Ice mass hull was encased by an outer skin of aluminum.

Refrigerating machines circulated cold air through sheet iron pipes embedded in the hull to keep it afloat.

O.K., boys. Let's keep this idea alive in the files, huh?

Hail Dr. Schlumbohm

Our favorite inventor and *bon vivant,* Dr. Peter Schlumbohm, has been granted another patent (among many). This time it's for a new principle of propulsion. He proposes to mount airplane wings *vertically* on a car or boat and utilize them to put push into their lift (or is it *vice versa?).*

In his proposed propulsion apparatus a fan is mounted on a horizontal shaft. Near the ends of this shaft are two doughnut shaped airfoils which resemble airplane wings, but which, in his words, "don't defy their fathers."

"I have turned the airplane wing 90 degrees," writes Dr. Schlumbohm, "and made a pushing thing out of it for grounded vehicles. Primary application of this principle is to the motor car, which in this case I would call a Pneumobile. It also could be used on boats and on sledges over snow and ice."

Dr. Schlumbohm concedes that inventions such as this one, which involves totally new principles, may take a decade or more for acceptance.

Inasmuch as he believes that an inventor should continue to eat in the meantime (and preferably well) he intends to keep on with "small inventions"—such as his profitable coffeemakers.

Seven profitable products of his Chemex Corp. were displayed, incidentally, in the United States Pavilion at the Brussels World's Fair.

His newest U. S. patent is No. 2,855,053.

Woe Is a Serviceman, Again

We quote, without further comment, this excerpt from a speech by Jerome D. Fenton, general counsel of the National Labor Relations Board.

"Recently we had a case which may illustrate for you how far afield we may at times be led in administering the Taft-Hartley Act.

"The complaining individual in this case—a mechanic—was sent by his company to a customer's home to repair a washing machine. Upon completion of the work during the customer's absence from the house, that harried individual left the following note, which unfortunately led to his discharge:

" 'Here is the grinding noise. Had to dismantle the washer to get it out. Machine otherwise okay. . . . Suggest you check thoroughly for bobby pins before washing your hair in this washer. Also keep your mouth closed, as the motion of the agitator has been known to dislodge dentures while beating the head back and forth. Also, remove your glasses and keep your eyes closed. Your bill will be $16.00.'

The NLRB concluded that, artistry aside, these helpful hints to homemakers were not among the activities protected by the Taft-Hartley Act, and refused to issue a complaint."

SO HALSTEAD & MITCHELL ENGINEERS SAID . . .

FOR LIKE-NEW PERFORMANCE YEAR AFTER YEAR— H&M COOLING TOWERS

Halstead & Mitchell Cooling Towers give rated performance even after years of operation

Special pressure creosoting of the wood fill prevents formation of fungus and algae which can build up and restrict the tower air flow, reducing system capacity. Only Halstead & Mitchell Cooling Towers carry a 20-Year Guarantee against failure due to fungus attack or rotting.

Sealed fan bearings are permanently lubricated, require no maintenance.

Tower housings are completely protected against corrosion by separate coatings of Vinsynite, Vinyl zinc chromate, and chlorinated rubber applied *after assembly.* Every edge, every corner is sealed against rust on all H&M Cooling Towers.

H&M Cooling Towers are available in propeller fan, centrifugal fan, belt drive, direct drive, and take-apart models. Capacities of 2 through 125 tons. For complete information contact your local distributor, or write to Halstead & Mitchell, Bessemer Bldg., Pittsburgh 22, Pa.

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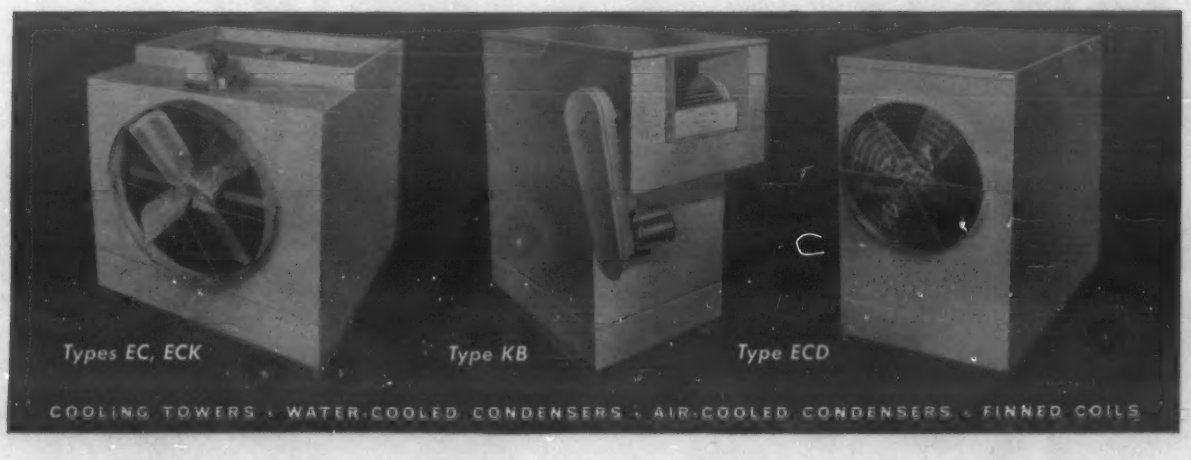

COOLING TOWERS · WATER-COOLED CONDENSERS · AIR-COOLED CONDENSERS · FINNED COILS

Grand Rapids Proposal Designed To End 'Discrimination'--

(Concluded from Page 1)

were being discriminated against by the refrigeration board, especially because they could never find out why they failed the exam.

This view is not shared, however, by at least one heating contractor who sometime ago successfully passed the examination and obtained his license to install air conditioning.

"The exam was just too tough for the average heating man, who doesn't really understand the psychrometric chart and how to use it," he declared.

Former License Holder Couldn't Make Grade

That there could be an element of truth in the charges of discrimination by the refrigeration board might be indicated by the difficulties a refrigeration contractor had not so long ago in trying to get a heating license. Although apparently fully qualified—in fact, he had held a heating license some years previously—this contractor was not granted a license until certain heating contractor friends went to bat for him, or so it is claimed.

The implication was that the heating board was simply "getting even" with the refrigeration board.

Regardless of the validity of the charges and counter-charges, the problem for the heating contractor has been accentuated by the trend to remote air-cooled equipment in both residential and commercial air conditioning applications.

City Has 3 Classes

Three classes of installing licenses are provided by the Grand Rapids code on "artificial refrigeration," as it is called.

Class A licenses cover *self-contained* air conditioning, refrigeration, and heat pump equipment not exceeding 7½ hp.

Class B licenses cover *self-contained and remote* equipment above 7½ hp. through 15 hp.

Class C licenses are unlimited as to horsepower.

Thus, to do business today, the air conditioning contractor in Grand Rapids who concentrates on residential and small commercial must have a Class B license.

While residential air conditioning has not become a big factor in Grand Rapids yet (although most everyone thinks it will eventually), commercial installations are numerous and growing, contractors say.

There would be heavy emphasis on air conditioning in the makeup of the proposed new heating and cooling examining board, under terms of the amendment as it now stands.

The board would consist of nine members as follows:

One would be the head of the Department of Inspection Services.

Three would be heating contractors.

Three would be refrigeration and air conditioning contractors, two of whom being engaged in both refrigeration and air conditioning and no more than one who is exclusively engaged in refrigeration.

Two would be engineers and experienced in testing and examination of persons, but would be completely outside the heating and refrigeration business.

Presumably, the new board would not relax requirements for air conditioning licenses. Present thinking of heating contractors is that having representatives on the combined board would assure them of fair treatment, and that the same would apply to the refrigeration man seeking a heating license.

'Wet Heat' Men Not Members of Group

Big question mark at this time regarding the adoption of the proposed amendment is whether the "wet heat" contractors will go along with it. The Grand Rapids Heating & Air Conditioning Association is a warm air and sheet metal group and does not therefore represent the local "wet heat" industry. The latter, however, would want to have a voice on the city board, one would assume.

Ederle, secretary of the warm air association, is confident that there'll be no serious difficulties on this score, however.

Pertinent portions of the proposed amending ordinance are as follows:

Section 3. A Heating and Refrigeration Board is hereby created and vested with all the powers necessary to carry out the provisions of the Heating and Refrigeration Ordinances and their amendments. The Board shall consist of nine (9) members, who shall be appointed and approved by a majority of the City Commission elected. One (1) member shall be the head or acting head of the Department of Inspection Services. Three (3) members shall be persons engaged or working in the business of heating for at least a period of five (5) years during which time each has held continuously a "B" license in a minimum of one (1) heating classification. Three (3) members shall be persons engaged or working in the business of refrigeration for a period of at least five (5) years during which time each has held continuously a refrigeration license, provided, however, that of the three (3) members of the refrigeration and air conditioning fields no more than one (1) member shall be from the refrigeration field exclusively. Two (2) members shall be persons who are not nor have been engaged nor working in either the heating or refrigeration business but who are qualified in the field of engineering and experienced in the testing and examination of persons. The head or acting head of the Department of Inspection Services shall serve continuously on the Board as long as he shall remain in that position. Whenever he shall leave that position for any reason, his successor shall be appointed as a member of the Board. The term of appointment for all other members shall be for a period of two (2) years. However, the term of appointment when this ordinance takes effect shall be one (1) year, except for the head of the Department of Inspection Services, for one (1) person from each of the three (3) classifications. Thereafter, the term of appointment for all members shall be for two (2) years.

Section 4. The Board shall establish and compile rules and regulations for all phases of heating and refrigeration units and systems and for examination of applicants desiring to obtain a heating or refrigeration license. Said rules shall be submitted to the City Commission for its approval and adoption, which, when adopted, shall then be considered to be a part of this ordinance.

Section 5. All ordinances or parts of ordinances in conflict with any of the provisions contained herein are declared repealed.

Section 6. Whenever the heating or refrigeration ordinances or their amendments refer to the Heating Board, the Refrigeration Board, or the Board, such references shall now be deemed after the passing of this ordinance to mean the Heating and Refrigeration Board.

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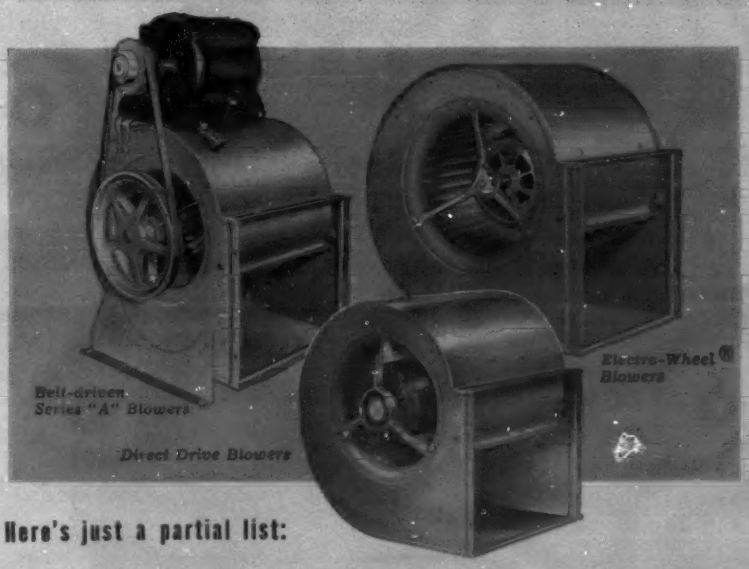

Here's just a partial list:

The Advance Furnace Company
Auburn Foundry, Inc. Heating Division
Blissfield Manufacturing Co.
Bohn Aluminum & Brass Corp. Betz Division
Floral City Heater Company
Friedrich Refrigerators Inc.
Walter Haertel Company
Home Furnace Company
Iron Fireman Manufacturing Co.
Keystone Manufacturing Co.
H. C. Little Burner Co., Inc.
Magic Aire Division United Electric Company
L. E. Minns & Company, Inc.
Pioneer Co.
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Texas Products Manufacturing Co.
Victor Furnace Company
Wichita Precision Tool Co., Inc.

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in air moving

Engineering advances such as Preslok® construction and Electro-Wheel Blowers. Delivery—quick and sure. Competitive prices. Talk to any of our customers and you'll find they have good reasons for calling LAU to help them move air. Maybe that's why we've grown each year until we sell more blowers and components than any other manufacturer. And isn't that a pretty good reason for seeing LAU about your air moving problems? **LAU Blower Company,** 2027 Home Ave., Dayton 17, Ohio. OTHER PLANTS at Irwindale, Calif., and Kitchener, Ont.

Leaders look to these LAU Sales-Engineers for on-the-spot help . . .

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Dearborn, Michigan
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Ben T. Clark
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Elmwood Park 35, Illinois
William J. Lohrey
2047 77th Avenue

Kansas City 14, Missouri
Charles L. Sigman
8906 Holly Avenue

Irwindale, California
G. R. Mergenthaler
15601 Arrow Highway

Prairie Village 15, Kansas
Victor Stewart
7112 Buena Vista

Seattle 55, Washington
William M. Peistrup
19246 Lago Place

Syracuse, New York
Henry Seebach
560 Allen Street

York, Pennsylvania
E. F. Humphrey
327 Lambeth Drive

FTL Laboratories Have 3 Unusual Work Areas

1) Super-Clean Area for Gyroscope Testing, Assembly; 2) Vapor-Controlled Area; and 3) Universal Area

SAN FERNANDO, Calif. — The one-story laboratories building here of Federal Telecommunication Laboratories, largest research and development division of International Telephone & Telegraph Corp., is fully air conditioned.

The building provides facilities and equipment to conduct exacting research and development activity.

Three unusual types of working area have been provided:

1. A super-clean area for assembly and testing of micromechanical devices such as gyroscopes or other inertial navigation devices.

2. A vapor-controlled area whose atmosphere is drawn from a 40-ft. tower to minimize contamination by automobile exhaust vapors, then treated to accurately control all its vapor content, including, especially, vapors from experiments in adjacent areas.

3. A "universal" area which is quickly convertible from private to semiprivate offices to flexible and efficient electronic laboratories.

In addition, the radiation laboratory includes special-purpose rooms for such functions as vacuum-tube assembly, leak testing, phosphor settling, hydrogen furnace operation, and vacuum deposition.

The 22,400-sq. ft. building incorporates several unusual or unique features, says FTL.

For one thing, the whole building is comfort conditioned by scores of separate air-to-air refrigerating units, FTL pointed out. In winter, the building is heated by running these separate air conditioning units as reversed heat pumps.

Another feature is the provision for an oscilloscope room separate from the super-clean rooms, but communicating therewith by means of a viewing window, plus a set of remote control panels carrying electrical cables and remote control shafts.

"Thus," it was noted, "oscilloscopes, voltmeters, and other inherently dirty electronic test equipment can be used by engineers in the super-clean room without bringing such test equipment physically into the super-clean areas."

Still another feature is the use of double walls between different project rooms in the vapor-controlled area with low-pressure air spaces between the walls to prevent the flow of even a few molecules of vapor from one room to another.

Also stressed was the 150-ft. even-temperature infrared test tunnel, buried in the earth beneath the building with both ends accessible from the building.

Glass-Working Facilities

The laboratory boasts glass-working facilities for infrared and inertial navigation studies, a completely-equipped chemical laboratory, high vacuum facilities, low temperature facilities for cryogenic research, and all facilities necessary for constructing vacuum tubes of any type.

Six separate plumbing systems distribute hydrogen, oxygen, natural gas, and compressed air in addition to hot and cold water, and four separate waste disposal systems are provided.

Dust, Humidity Control Critical

For inertial navigation research and development involving development and testing of high-precision gyroscopes and other guidance and control components, control of dust and air temperature is critical; humidity should be fairly low to avoid rust and perspiration, FTL said.

"Consequently," it was pointed out, "the so-called super-clean rooms for gyro work in this laboratory are designed and built to keep out even the smallest particle of dust while holding the temperature at 71° F., plus or minus one degree, and keeping humidity below 40%.

"Here's the complicated procedure followed by a scientist or technician on entering the super-clean gyro test rooms:

"He first enters a small air-lock painted a glossy jet black with the lighting intensity greater than 400-ft. candles. Such a black room causes any particles to show up much more clearly than a conventional white or light-colored room. The air pressure in this air-lock is slightly above the normal building pressure so that air cannot leak in from the rest of the building.

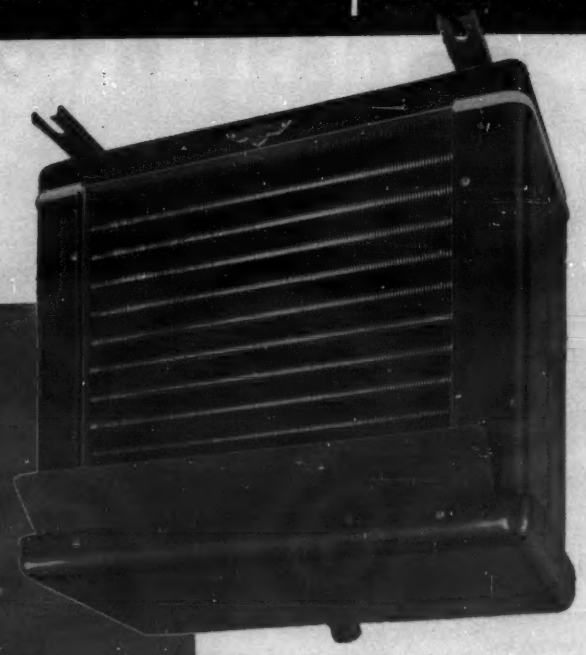
"He vacuums his clothing with

(Concluded on next page)

Westinghouse Parts Center Uses Electronic Brain

RAMAC, an electronic brain, is hurrying renewal parts orders on their way in nearly one half the time it previously took to ship orders from the Westinghouse Renewal Parts Center here. The computer is capable of receiving and processing daily 5,000 orders for more than 25,000 different renewal parts. Shown here is Philip Evans, a supervisor at the center, as he "loads" more orders in the machine. To his right is the control center for operating RAMAC (random access method of accounting and control). It is installed in a completely air conditioned room where the temperature is kept at a constant 70° F. the year around.

Fast defrost! Economical operation!



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ELECTRIC DEFROST
LOW TEMPERATURE
HUMI-TEMP

Here's the unit for the cooling jobs below 32°F. The automatic electric defrost keeps the coil free of ice without overheating—enables the evaporator to function at greater efficiency and lower operating costs. Independent defrosting and refrigeration circuits give dependable, trouble-free service.

Complete Defrost

Sealed tubular heaters are integral parts of the coil. They defrost by *radiation, conduction, and convection*—work fast so the coil can work best.

Fully Adjustable

The defrosting cycle is controlled by a time clock. It can be adjusted for any number of defrosts a day and for any length of time from 2 to 55 minutes.

At the end of the defrost cycle, an adjustable delay period allows the compressor to start before the fans to prevent a blast of warm moist air from entering the refrigerated area.

Investigate the many advantages of the LARKIN Electric Defrost Low Temperature Humi-Temp.

For complete data, see your wholesaler or write for bulletin number 1055.

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- Patented Larkin Cross-Fin Coil—aluminum fins and staggered tubing.
- Heating elements easily removed and installed through side access panel.
- Drain pan has conductive rubber electrical heating pad which assures complete drainage.
- Standard permanently lubricated heavy-duty motors designed for low temperature applications—resilient mounting on adjustable slotted base.
- Heat exchanger provided as standard equipment.
- Heavy gauge, die-stamped aluminum case, finished in Larkin Blue.

BASIC RATINGS

Model	Capacity Btu/hr @ 10° TD F	Total Surface Area	Cfm	DEFROST DATA Coil Heater Watts	DEFROST DATA Drain Heater Watts
ELT-26	2600	69	800	600	155
ELT-32	3200	79	1000	900	155
ELT-42	4200	98	1400	1080	230
ELT-52	5200	131	1550	1440	285
ELT-65	6500	150	1700	1920	285
ELT-82	8200	201	2200	1920	285
ELT-104	10400	226	2800	2880	400
ELT-130	13000	301	3200	3840	510
ELT-160	16000	401	4400	3840	510
ELT-240	24000	501	5600	4800	620

MANUFACTURERS OF THE NATION'S FOOD AND COOLING MACHINES

LARKIN COILS INC.
519 MEMORIAL DRIVE, S.E., ATLANTA, GEORGIA

FTL Lab Air Conditioning--

(Concluded from preceding page)

a special attachment connected to a central vacuum system; he inserts each foot into a special automatic shoe-cleaning machine in which the shoe is buffed free of dirt which is sucked away immediately by the same central vacuum.

"After donning special lint-free garments and cap, and applying lotion to exposed areas on neck, hands, wrists, and eyebrows to prevent chapping in the low humidity and to minimize the flaking of skin, he proceeds to a second air-lock. There the pressure is higher than in the first air-lock to prevent an influx of air currents.

Gyro Testing Room Has Still Higher Pressure

"Finally, he proceeds to one of the gyro testing rooms in which the air pressure is still higher.

"In these rooms, walls and ceiling are surfaced with non-porous high-gloss vinyl enamel; floors are of continuous vinyl plastic sheeting, instead of plastic tiles with the numerous cracks between the tiles. View panels of plate glass are built into one wall to permit observation from outside.

"Both of the super-clean gyro test rooms are arranged adjacent to an oscilloscope room so that one technician in the scope room can assist testing personnel in both test rooms. Windows and control cables enable the oscilloscopes and other test equipments to be used remotely.

"Built into a corner of one gyro assembly room is a cleaning booth incorporating a revolving fixture in the wall. The fixture—reminiscent of a bank night-deposit device—is an air-tight pass-through to a precision machine shop which qualifies as a clean-room itself.

Vapor Controlled Rooms For Solid State Research

"Just across the corridor from the super-clean gyro testing rooms are five somewhat similar appearing rooms known as the vapor-controlled rooms. Since these five rooms are intended for solid state research where control of all vapors is critical, they are designed with less attention to dust and more attention to control of vapors.

"All air used in the vapor-controlled rooms is drawn from an inlet in the top of the tower so as to minimize contamination by automobile exhaust.

"The air is electronically filtered, washed with a water spray, and filtered through activated carbon to absorb remaining traces of organic vapors. Since water vapor itself is an important element of the atmosphere, the percentage of such vapor is carefully controlled.

"Because complete elimination of humidity is medically undesirable, the humidity is held to a very constant level of approximately 22½%, plus or minus 2½%. In contrast, it should be noted that in the super-clean rooms the humidity is merely maintained below 40% but need not be held accurately constant.

"In the vapor-controlled rooms, the normal asphalt tile floors and the special vinyl sheeting used in the super-clean rooms would be objectionable because any such material emits small traces or organic fumes. The floors, therefore, are of inorganic terrazzo material. The paint used on the walls and ceiling also is of a special type having extremely low vapor tension.

"Each of the partition walls between the vapor-controlled rooms is constructed as a double wall with two separate rows of studs, and the concealed space between these two walls is maintained at a lower pressure than in the vapor-controlled rooms. Thus, even if vapor should seep through one wall into this concealed space, it could not seep from this low-pressure point into the adjacent higher-pressure room.

"Pipe fittings entering the room are sealed and electrical fittings are of the gasketed type to prevent seepage. Electrical conduits are calked, and where they pass through the low pressure hollow wall small vents are provided to insure that the interior of the conduit also is at a reduced pressure."

A so-called "dirty" machine shop containing several different types of grinding equipment, and a good general purpose machine shop with high-grade conventional machinery are located adjacent to a precision shop, but walled off for better control of dirt.

The temperature in the precision shop is maintained accurately at 71° F. for proper operation of the unusually accurate machine tools and measuring equipment including many Swiss-made machines, a precision jig borer, and ultra-precise instrument and engine lathes. No grinding operations are permitted here.

Janitrol Aircraft's High Altitude Test Chamber Has High 'Heat Rejection' Rate

COLUMBUS, Ohio — Janitrol Aircraft, sister division of Janitrol Heating & Air Conditioning of Surface Combustion Corp., has announced the beginning of operations in its new $2,500,000 plant here.

In the first public demonstration of the company's high-altitude test chamber, local newspaper editors, and national aviation and business publication representatives heard Robin A. Bell, president of both Janitrol Divisions, affirm the company's belief in a bright outlook for the aviation industry.

The altitude chamber, one of the largest of its type in the country, is one of the few privately owned facilities available full-time for research and environmental testing of commercial products. It stimulates conditions at from the ground to altitudes of over 22½ miles above the earth."

"A unique feature of the chamber is its extraordinary 'heat rejection' rate while maintaining high altitude conditions," the company said. "It is capable of testing an aircraft heater in operation, generating 1,00,000 B.t.u.h., while temperature in the chamber is held to -65° F. and simulated altitude maintained at 80,000 ft."

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"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zani, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

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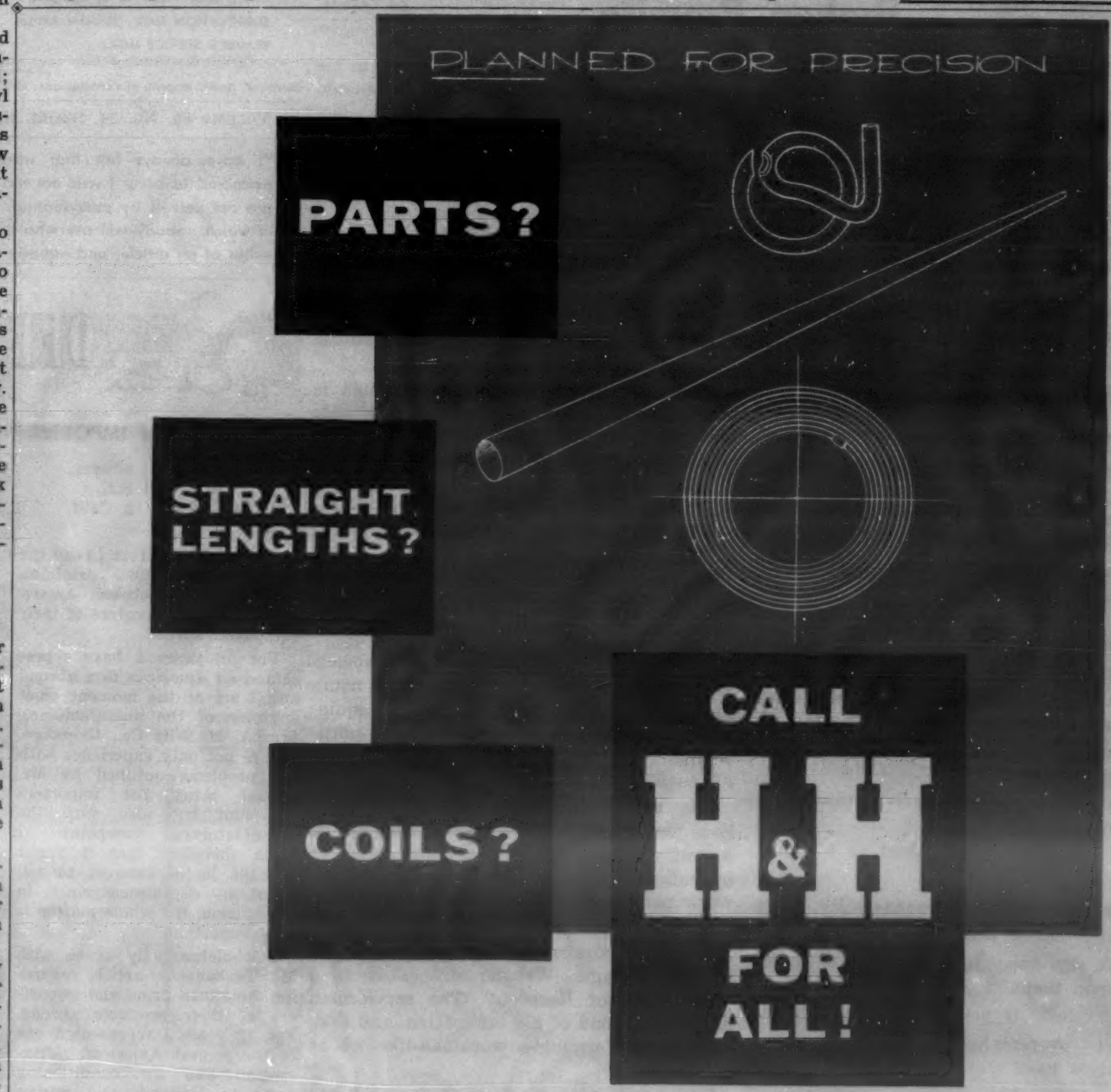

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by

Jimmy Hatlo

CHEDDAR MADE A PEST OF HIMSELF ON HIS FALL VACATION TRIP--- CALLED THE OFFICE TWICE A DAY....
HELLO, BOSS--THIS IS CHEDDAR AGAIN---JUST THOUGHT I'D LET YOU KNOW WE PULLED OUT OF GINVILLE LAST NIGHT----WE'RE AT ARSON LODGE, NEW MONIA, TODAY....
LOOK, CHEDDAR--- QUIT CALLING US, WILL YOU? THE OFFICE CAN GET ALONG WITHOUT YOU! WHY NOT ENJOY YOUR VACATION?
HE DIDN'T CALL YESTERDAY AND TODAY, HOWEVER--AND OH, BOY!! ARE THEY TRYING TO LOCATE HIM!
WE GOT TO FIND HIM!! A MILLION-DOLLAR DEAL GOES OUT THE WINDOW IF WE DON'T! CALL EVERY HOTEL ON ROUTE 98! CALL THE F.B.I.! GET ME THE MISSING PERSONS' BUREAU!!
THE DESK CLERK IN GOONSVILLE THINKS HE SAW HIM LOOKING AT A MAP OF ALASKA...
HELLO--ALCAN HIGHWAY PATROL...
THANX AND A TIP OF THE HATLO HAT TO GEO. DRISCOLL, CLEAN HOUSE, CLEAN, N.Y.
11-20

You Can Fix Anything—But A Broken Promise

WITH the possible exceptions of "Mac" McDermott and the late Paul Reed, probably E. E. "Judge" Landis is the man best known and most respected amongst our nation's qualified refrigeration and air conditioning servicemen.

He is an eloquent preacher of the gospel that best customer relations are maintained through *good service*. In speeches around the country he emphasizes such cardinal points as the following (not his words, these: we have paraphrased them).

Answer all service calls promptly. Never say you'll be there tomorrow, then fail to show.

Be clean, courteous, and decent.

Treat the customer like you treat your Boss—and remember that the customer IS your Boss, actually.

When an adjustment is in order make it—without argument or delay.

Remember customers aren't perfect—neither are you.

Really WANT to give good service—make it a matter of personal pride.

Be a good listener: let the customer tell her story completely.

Thank your customer for the opportunity to be of service.

Never argue, no matter how much you are provoked.

Don't refer to any product as a lemon and say it can't be fixed.

If you have to shift responsibility, don't do it in front of the customer.

Don't shy away from complaints—capitalize upon them.

Don't bluff. If you don't know, say so.

Don't overemphasize *your* troubles. Housewives have more than you do.

Now come his *positive* recommendations:

1. *Neatness.* A serviceman should look good. His clothes should be clean and orderly. The customer's impression of the dealership, *and in many cases the product itself,* often is formed by the general appearance of a serviceman.

2. *Optimism.* A serviceman's personal ambitions and character are reflected in his bearing toward users and his job. He should be positive and optimistic at all times.

3. Friendliness. He should recognize that pleasing people is as important in service work as it is in sales. Like people and they'll like you.

4. *Attentiveness.* Every serviceman should exercise patience in listening to the user's trouble story. Such attentiveness often can help in diagnosis, and certainly is conducive to better consumer relations. *Be a good listener.*

5. *Consistency.* A good serviceman is *stable* in his ideas and conversation. He also is stable in his employment record. Reliability in attendance and meeting appointments is of the essence.

6. *Tact.* A serviceman should recognize that tactfulness and diplomacy are necessary in all walks of life, and especially on jobs covering direct relations with the public. Service contacts require the utmost effort in terms of tact and courtesy.

7. Consideration. A serviceman spends the greater portion of his working hours handling other people's property and equipment. He works on *their* premises. Application of the "Golden Rule" is essential in all such endeavors.

8. *Honesty.* A serviceman's time quickly is translatable into money. He should be honest with the customer and his employer by indicating correct time, parts usage, and work performed, on all work orders.

9. *Pride.* The job a serviceman performs is exquisitely necessary in this mechanical age. Webster defines it as a "Profession of Respect." The serviceman should be proud of his occupation, and take pride in performing a workman-like job at all times.

10. *Helpfulness.* A serviceman should feel and deliver a genuine spirit of helpfulness in repairing equipment and offering suggestions for better use of the product.

In sum, better service means bigger sales, and higher prosperity for everyone engaged in our industry. The serviceman is the most important man of all to the person who needs him in a hurry.

Life is monotonous and dull to us only until we begin to discover the vast treasures that lie within ourselves.—EUGENE E. THOMAS.

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'The Conscience of the Industry'

Published Every Monday by BUSINESS NEWS PUBLISHING CO., 450 W. Fort St., Detroit 26, Mich. Telephone Woodward 2-0924. Subscription Rates: U. S. and Possessions and Canada: $6.00 per year; 2 years, $9.00; 3 years, $12.00. All other countries: $10 per year. Single copy price, 40 cents. Ten or more copies, 30 cents; 50 or more copies, 20 cents each. Send remittance with order.

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VOLUME 85, NO. 14, SERIAL NO. 1,549, DECEMBER 1, 1958

"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—*Charles A. Dana.*

SAYS FOREIGN IMPORTERS NEED ENGINEERING HELP

Gerald E. Landweer,
M.E. and E.E.
Los Angeles 8, Calif.

Editor:

With great interest I read the articles in the NEWS pertaining to cooperation between American firms and importers of their equipment abroad.

For 10 years I have represented an American firm abroad and I am at the moment chief engineer of the manufacturing firm A. H. Witt Co., therefore, I have not only experience with the problems outlined by Mr. Forani being the importers viewpoint but also with the manufacturers viewpoint. I think therefore that it might perhaps be of interest to tell about my experiences since, in my opinion, the whole matter is very important.

I wholeheartedly agree with Mr. Taubeneck's article regarding American firms and importers of their products abroad. For 10 years I represented one of the largest American refrigeration and air conditioning firms in Holland, and during that period I saw only three times a "General Sales Manager," whose main interest appeared to be besides complaining about the weather, if I had something to order out of their manual.

It was almost impossible to get any engineering information on problems relating to the manufacturer's equipment or an answer to problems with designs in which their equipment was being used. It took weeks and weeks to get a reply, if any, and in most instances the reply was not even straight to the point.

In fact, the cooperation was so poor that I had to go to New York to discuss matters personally. Questioning why we did not get more and better engineering information—the answer was: "Our continental business is only 1% of our total business, therefore, we do not wish to spend too much time on replies!"

That this proved to be the wrong attitude was clear when the firm lost every year more business to their main competitor and was finally taken over by a larger concern and reorganized. When I was in Europe recently a large European firm told me that they had given up the representation of an American manufacturer due to the fact that one of their units had a poorly designed part and that the manufacturer even after repeated requests did nothing about it to change the design. I agree, therefore, with the viewpoint that more engineering information and more action and, perhaps, less sales talk is the answer.

But this applies to this country, too. As chief engineer of a manufacturer, my experience is that contractors, consulting engineers, architects, etc. prefer much more to see a representative of a manufacturer who knows everything as an engineer about their product and can assist with the incorporation of the product in their designs than a salesman with a super sales pitch.

GERALD E. LANDWEER

Industry Asks Properly Qualified 'Heating, Ventilating, and Air Conditioning' Inspectors To Enforce New San Francisco Code

SAN FRANCISCO — There should be properly qualified "heating, ventilating, and air conditioning" inspectors in the Bureau of Building Inspection in order to properly enforce the new building code, industry speakers told the San Francisco Civil Service Commission.

The commission made a special order of business for the subject on Nov. 20.

Although it had asked to be notified, Anthony Meley protested to the commission that the industry had not been advised by Superintendent of Building Inspection Lester C. Bush when he sent through channels his request for "heating and refrigeration" inspectors.

Meley is secretary of the Sheet Metal Contractors Association of San Francisco.

Examination for these inspectors was set for Nov. 28. To qualify for the examination requires completion of a recognized apprenticeship of five years in refrigeration, plus five years' experience as a refrigeration journeyman.

In addition, the Civil Service announcement asked that these refrigeration journeymen have heating experience, and provided that commercial and industrial heating, and mechanical ventilation, be in the scope of the examination.

Anthony Meley, as first speaker before the commission, said the skill required for the examination is excellent for refrigeration inspection, but refrigeration journeymen do not have "air handling" and duct skills needed for the many ventilation, heating, air conditioning, and exhaust inspections required by the new code.

These air handling and ductwork skills are the particular province of the sheet metal journeyman who has planned, estimated, installed, or supervised various types of air installations, it was stated.

Asks Bureau Not To Depart From Past Policy

Meley pointed out that inasmuch as it is the fixed policy of San Francisco to use the proper journeyman skills for all outside inspectors in the building inspection bureau, they should not depart from that policy now when preparing classifications to enforce new heating, ventilating, air conditioning, and refrigeration parts of the building code.

He also asked why the commission staff had not asked the help of his office in classifying building inspection positions, when for jobs in other city bureaus and departments requiring sheet metal workers it had asked for detailed information from his office.

Frank Burk detailed for the commission the work of sheet metal journeymen who do "air handling," set fans, and control air in addition to making and installing ducts. Burk is veteran business representative of Sheet Metal Workers Local 104.

Burk said there is no conflict with refrigeration workers, that the demarcation between sheet metal journeymen in air handling, and refrigeration journeyman in cooling, is quite clear.

Roland R. Taylor told the commission air handling is very important in providing healthy environmental control, and highly skilled journeymen from the sheet metal trade are needed to do the job properly.

Taylor is application engineer for Fraser & Johnston Co. of San Francisco, manufacturer of furnaces and air conditioning whose equipment is sold nationwide. Taylor is also trustee representing the west coast on the board of the National Warm Air Heating & Air Conditioning Association, and a director of the Warm Air Heating Institute of Northern California.

Commission President Wm. A. Lahanier read a letter from Superintendent Bush in which Bush said refrigeration journeymen would have to learn heating, ventilating, and air conditioning to do the inspection job he requested be set up.

Bush was present. After answering questions asked by the commission, he defended his position with the statement: "What we want to do is to get highly qualified people to do this work."

M. M. Smith, secretary of the Refrigeration & Air Conditioning Contractors Association of Northern California, supported Bush's position in asking for refrigeration "heating and refrigeration inspectors."

Smith was accompanied by Frank McDermott, refrigeration business agent for UA Local 38. McDermott agreed there is no conflict with air handling journeymen from the Sheet Metal local, that each has a definite skill not overlapping the other.

Cites Precedents

Replying to Bush, Commission President Lahanier pointed out other separate and distinct journeyman skills were recognized in Bush's bureau of building inspection, that electrical journeymen do the electrical inspections, and plumbing journeymen do the plumbing inspections.

In his letter, read by the commission, Bush referred to the "heating and refrigeration" inspectors in a division of the Mechanical Bureau, Los Angeles Dept. of Building & Safety.

In reply to this, another speaker pointed out to the commission that while Los Angeles has "heating and refrigeration" inspectors, these jobs were first set up quite a number of years ago before refrigeration journeymen, and sheet metal air handling journeymen, training programs were as well developed as they are now.

Also it was noted that the Los Angeles "heating and refrigeration" inspectors are primarily qualified in junior engineering skills, rather than the journeyman skills which San Francisco has traditionally required of outside inspectors.

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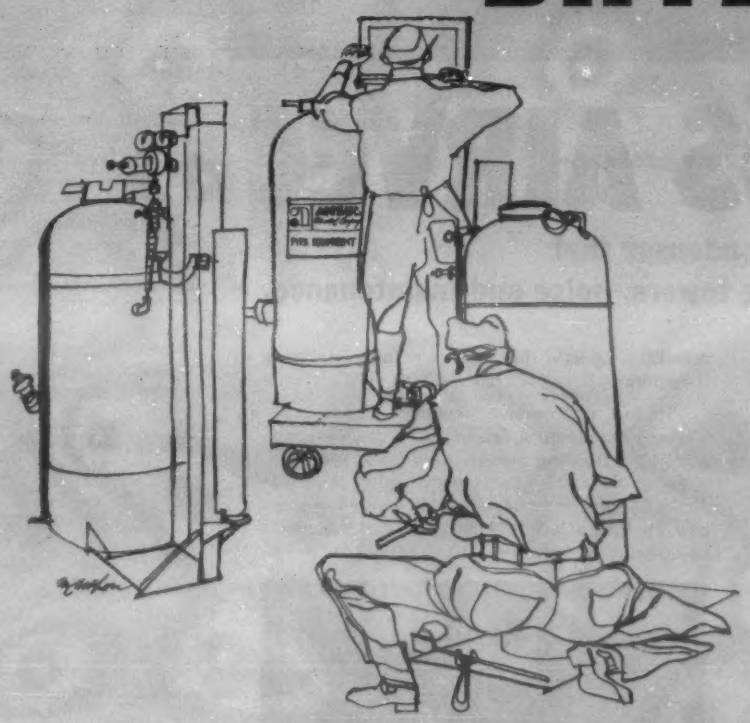

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Icemaker Uses Gravity Principle

The "Council Icemaker," a new and "radically different" ice making machine built and sold by Council Mfg. Co., Dept. AC&RN, Fort Smith, Ark., is being introduced to the food serving and motel industries.

The unit was designed to eliminate much of the cost of servicing this type of product, according to Dansby A. Council, president of the firm.

The Council Icemaker uses a simple gravity principle, with a balanced weight, to trigger its ice making cycle, it was explained.

Water flows across an inclined plate and is refrigerated and cooled until it starts to freeze. The layer of ice builds up until, by its own weight, it tips the plate forward into harvesting position.

"The refrigeration cycle reverses, thawing the slab of ice and letting it slide into the crusher which runs only during the harvest cycle.

"Every part in the Council Icemaker is standard except the freezer plate and the crusher mechanism which are patented features manufactured only by Council."

DAX Is Detergent and Adhesive for Filters

A new Electro-air detergent-adhesive system, Type "X," and its cleaning-adhesive solution, "DAX," is an answer to the problem of how to completely get rid of the collected contamination on electrodes and plates of collecting cells in electronic air cleaners, according to Electro-air Cleaner Co., Inc., Dept. AC&RN, Olivia and Sproul Sts., McKees Rocks, Pa.

"Double-acting DAX, when mixed with wash water, promotes thorough washing of collecting cells, then dries and leaves an adhesive coating on collecting plates and electrodes," it was stated.

The applicator system for DAX is supplied as a package, and is available for Electro-air electronic air cleaners that have already been installed and are in operation as well as with new units.

Gas-Powered System Comes In 3 and 5-Tons

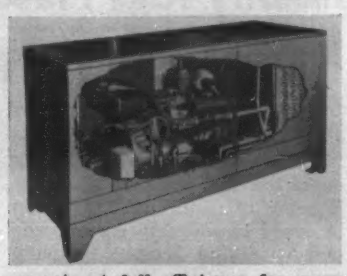
A gas-powered air conditioning system in 3 and 5-ton capacities has been introduced by Comfort Products, Inc., Dept. AC&RN, 440 Hillburn Dr., P. O. Box 8413, Dallas.

Its principal components are a gas-driven, liquid cooled, internal combustion engine; a 4-cylinder, V-type refrigerant compressor; an air-mist type evaporative condenser; and an automatic control system.

The entire unit is housed in an insulated, acoustically treated cabinet 72 in. long by 26 in. wide by 36½ in. high for remote application. It operates through any central air duct system.

Called the "Comfortemp," the unit is said to provide constant cooling balance through varying cooling output.

Manufacturer says the unit will

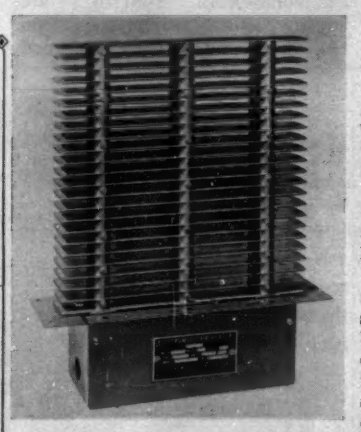


operate at full efficiency for more than 12,000 hours without attention.

The engine, which can be operated on either natural or LP gas, is equipped with a centrifugal, dry-type clutch that permits the engine to attain full operating speed before engaging the compressor.

Three-ton model uses R-12 and the 5-ton unit, R-22.

Electromode Offers Electric Insert Duct Heater



A new electric insert duct heater—a package unit ready for installation, completely wired for connection to the proper power system—has been announced by Electromode Div., Commercial Controls Corp., Dept. AC&RN, 570 Culver Rd., Rochester 3, N. Y.

Specifically designed for use with package air conditioning units and similar applications, the duct heater consists primarily of the Electromode exclusive safety grid heating element, mounted on the heater outlet box. This box is constructed of heavy gauge formed steel and is corrosion treated.

The safety grid is an aluminum casting with fins, which is cast and shrunk on a tubular type heating element.

"As the duct heaters are designed for operation in an air stream, it is necessary that there be a continuous movement of air over the grids," the company noted. "The Electromode unit has a safety switch which automatically breaks the service to the heater in the event of stoppage of air flow through the heater from any cause. It is an automatic reset type."

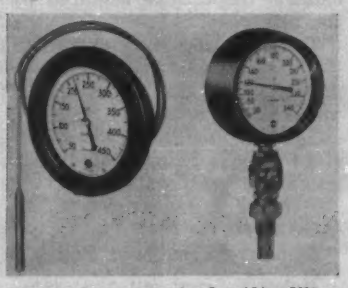
The duct heaters are made in two models: the DH-3 with a capacity of 3 kw. and the DH-5 with a capacity of 5 kw., and operate on 240 volts, single or three phase.

U. S. Redesigns Indicating Dial Thermometers

A redesigned line of indicating dial thermometers for measuring temperatures in the range of -350° F. to 1,000° F. is announced by U. S. Gauge Div. of American Machine & Metals, Inc., Dept. AC&RN, Sellersville, Pa.

Among the most comprehensive of filled-system lines on the market, the new thermometers bear the trade name "Supertherm," being associated both in design and appearance with the company's premium-quality "Supergauge" line of pressure gauges, the announcement said.

"The new USG dial thermometer line is complete in variations offered as to (1) remote or direct reading types; (2) methods of ambient temperature compensation, where required; (3) filling mediums for different temperature ranges and uses; (4) case sizes, materials, and styles; and (5) thermometer bulbs of different sizes, shapes, and materials to suit application needs," it was stated.



New Register Line Features Multi-Louver Valve

A new line of registers, featuring a multi-louver valve and one-piece face construction, has been announced by Air Control Products, Inc., Dept. AC&RN, Coopersville, Mich.

Called the "No. 120 Series," the new line is said to be especially suitable for year-round air conditioning systems; "it provides for easy raising or lowering of the air pattern."

The new one-piece face construction with ½-in.-wide stamped fins provides exceptional strength and large free area, the manufacturer claims. Fins are pre-set 30° out from the center of the face and can be adjusted to provide any horizontal air pattern required by the installation, it was stated.

Vertical control of the air pattern is obtained by moving the operator handle up or down. An "Adjusto-Stop" permits opening the valve to a predetermined setting.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

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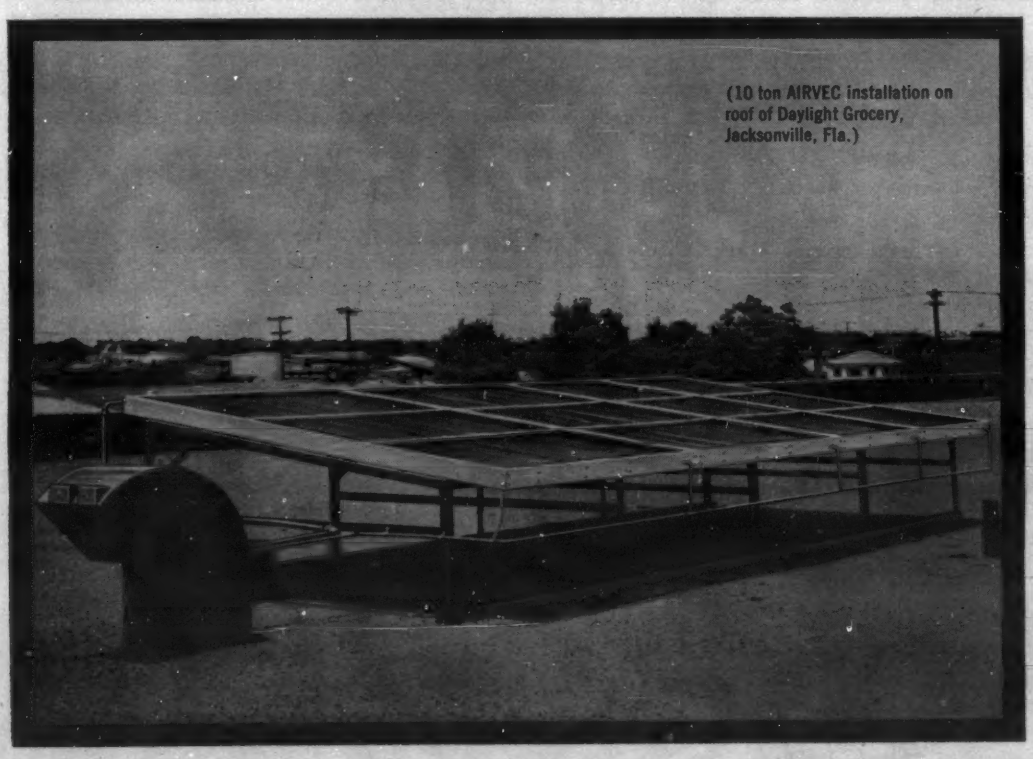


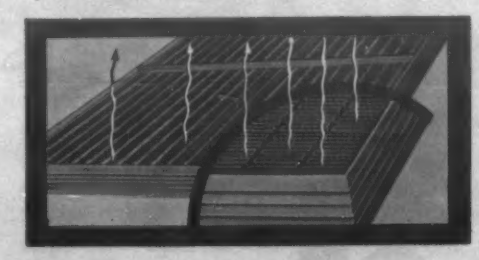
EDWARDS AIRVEC

...the air-cooled refrigerant condenser that eliminates fans, cooling towers, noise and maintenance.

For condensing refrigerants Edwards AIRVEC offers a simple, economical method that makes possible, for the first time, the elimination of fans, motors, and cooling towers! Because of its unique operating principle, AIRVEC requires no electrical power—the refrigeration or air conditioning system using AIRVEC requires 20% less power. With no moving parts there is no need for belts, pumps, fans or costly maintenance—and it's absolutely silent. And water is not used in the AIRVEC so there is no water treatment problem or periodic cleaning of condensers and towers.

The size of the condenser is virtually unlimited: you just assemble single AIRVEC elements in a single plane until the required area is covered. Initial installation costs are lower, too. And AIRVEC is so light that little or no special rigging is required.

Its low, unobtrusive silhouette blends easily with any architecture, leaving more useable space within the building proper. Roof loads are negligible so no extra beams are needed. Edwards AIRVEC Condensers are available in nominal sizes of 1.25, 2.50 and 3.75 tons and larger assemblies up to hundreds of tons.



The refrigerant gas is cooled and condensed by the movement of convection air moving upward through the AIRVEC condenser.

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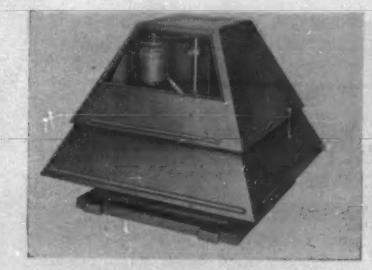


American Blower Offers New Ventilator Line

A new line of low-profile, low-speed centrifugal-type roof ventilators with non-overloading wheel and spun streamlined inlet complete with large access door, motor, and V-belt drive is now available from American Blower Div., American-Standard, Dept. AC&RN, Detroit 32.

Designated the model CR centrifugal roof ventilator, the line includes 13 basic ventilator sizes with various motor and drive combinations resulting in 111 catalog sizes.

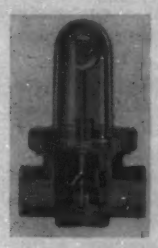
Each size is sound-rated to suit specific building environments and provide a multiple selection of capacities and quietness ratings for any type building requirement, the company said.

Announced capacities of the line range from 1,120 c.f.m. to 34,440 c.f.m. at free delivery to 26,540 c.f.m. at 1-in. w. g. static pressure.

All units have been tested and rated in accordance with Standard Test Code for Centrifugal and Axial Fans adopted by the Air Moving & Conditioning Association, Inc. and carry the AMCA Certified Ratings Seal, it was stated.

Arkon Flow Indicator 'Shows at a Glance'

A simple, reliable safety signal, its "Arkon" flow indicator shows at a glance whether flow is taking place, according to McIntosh Equipment Corp., Walker Crosweller Div., Dept. AC&RN, 15 Park Row, New York City 38.



"Clearly visible from a distance, even in a bad light, a chromium plated ring spinning under a toughened glass dome has definite movement which precludes chance of misreading," the company said. "Useful wherever there is circulating water or oil, some specific applications are cooling water to refrigeration equipment, air compressors, condensers; lubricating oil to bearings, gear trains, etc.

"The new variable flow models can be easily reset in the field for high or low range and are available with die-cast brass body in ½, ¾, and 1-in. pipe sizes for flows from 0.72 to 24 g.p.m. Other models are available for flows from .075 to 120 g.p.h. in pipe sizes up to 3 in.

Correction

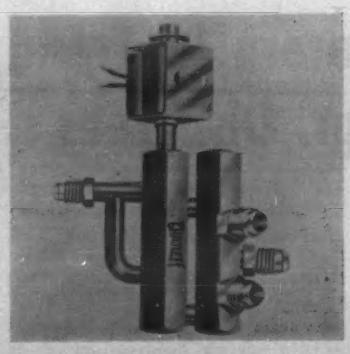
Halstead & Mitchell, Pittsburgh, has expanded its Type AC line of air-cooled condensers with 10 new models providing capacities of 30 through 100 tons. The number of new models was incorrectly reported as six in the Nov. 17 issue of the NEWS.

Produced in basic units of 30, 35, 40, 45, and 50 tons, the new condensers also are offered as twin units providing 60, 70, 80, 90, and 100-ton capacities. H&M's expanded Type AC line now consists of 22 propeller fan models ranging from 3 through 100 tons' nominal capacity.

Fitting Covers Are Precision Machined

A wide new line of fitting covers machined from "Styrofoam" (expanded polystyrene) and designed especially for low temperature piping is now available from Glo-Brite Products, Dept. AC&RN, 6415 N. California Ave., Chicago 45.

Precision machined to fit virtually all types of elbows, joints, tees, valves, and other fittings, in a range of sizes for all commercial and industrial requirements, the fitting covers can be engineered with any wall thickness.



Auto Cooler Control Method Announced

A new control method for auto air conditioners has been announced by Chatleff Valve & Mfg. Co., Dept. AC&RN, P.O. Box 996, Austin, Texas. The company said a single hermetic electric valve offers compressor unloading and temperature control.

"Rapid temperature cycling at any speed presents no strain or shock to the system components," the announcement claimed. "Wired in series with the on-off switch and the thermostat, the Chatleff 'Thermo-Control' provides a simple, complete, and safe method of control.

"When the Thermo-Control is de-energized, the system is unloaded. Internal valve orificing maintains a nominal work load of approximately 25 lbs. on the compressor at road speeds. This insures proper lubrication. Circulation through the evaporator and condenser is prevented in the off position."

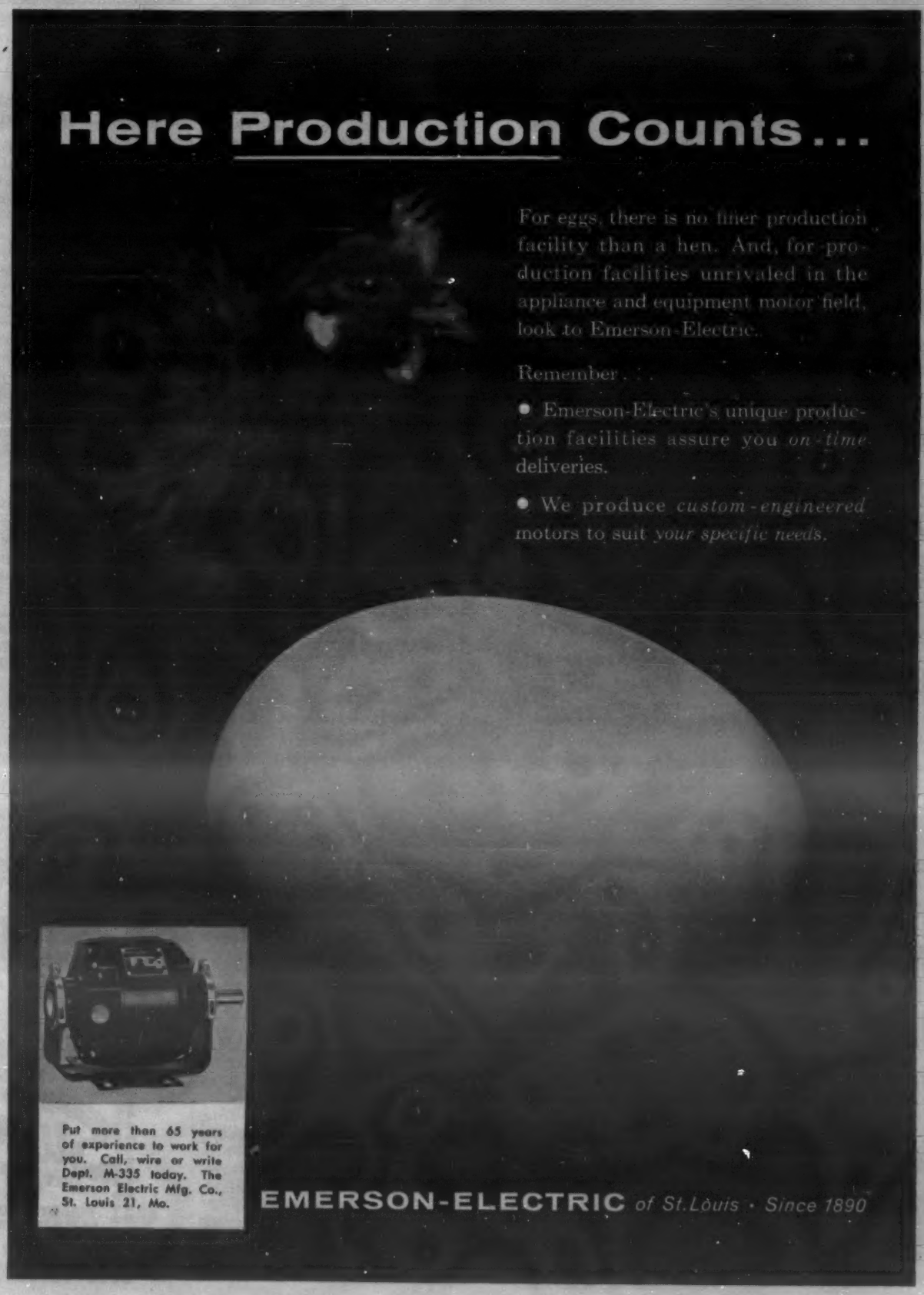
Resetting Device Actuates Several Switches

A new temperature reset, multiple sequence switching arrangement for use in air conditioning or heating has been developed by Automatic Devices Co., Inc., Dept. AC&RN, 714 Hillgrove Ave., Western Springs, Ill.

From two to six switches, actuated by a single temperature resetting device perform a multiplicity of switching functions, the firm said. It may load or unload compressors or may energize additional boilers or other heat transfer devices as load changes.

"One switch may energize the air conditioner at a selected outdoor temperature, as 76° F., a second switch may energize a first heating boiler at 65°, a third switch actuate the circulator at 65°, a fourth energize a second boiler at 30°, a fifth shift operation from natural gas to bottled gas or oil at 25°, and a sixth eliminate night setback of space temperature at 10° F."

"The temperature at which each switch operates is independently and infinitely adjustable throughout the operating range. Models are available in several capillary lengths with either a short rigid immersion type bulb or with an extended temperature sensitive bulb made of flexible tubing."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Utility Sees No Cause for Concern In Trend To 265/460 Volts; Service Mgr. Disagrees

ST. LOUIS—"I suggest that we not become too alarmed" about the growing use of 265/460-volt electrical systems, declared E. A. Fisher, system distribution engineer for Union Electric Co., utility here, in a talk before the 10th annual educational conference of the Midwest Association, Refrigeration Service Engineers Society.

"There is no cause for concern on the part of the air conditioning and refrigeration industry for this new voltage, since the system is suitable for the standard 440-volt three-phase motor equipment," he asserted.

"It is not intended as a supply to any single-phase motor equipment, except for small 115-volt equipment which would be supplied through step-down transformers," Fisher explained.

"This system was designed primarily to supply both 440-volt three-phase power loads and 'high bay' fluorescent lighting loads such as are found in large industrial establishments," he said. "Through use of fluorescent tube ballasts designed for 265 volts, considerable savings in wiring costs are realized.

"Circuits for 120-volt requirements such as incandescent lamps, plug-in appliances, etc., are supplied from small air-cooled transformers designed to supply 120/240 volts from the 460-volt feeders. These transformers are located throughout the building where needed," he explained.

"Most utilities, including Union Electric Co., will undoubtedly offer such service within certain limitations, such as the size of the load and its location on the system," Fisher predicted.

"For instance, in our downtown network area where 120/208 volts is the normal supply, the higher voltage will be offered for individual loads of 1,500 kva. or more. Outside the network area it will be offered for loads of possibly 500 kva. or more.

'No Such Installations Made on Our Lines Yet'

"It might be interesting to note that no such installations have been made on our system up to the present, although there are a few under consideration," Fisher revealed. "Since the system will provide savings in wiring costs to the customer, and some savings to the utility, particularly in the supply of relatively large buildings, its use may be expected to increase in the future. Its use does not appear justified for smaller loads, at least in our area."

Fisher's apparent lack of concern about the trend toward 265/460-volt systems isn't shared by John H. Spence, Hussmann service manager and RSES educational chairman, however, who cited troubles that have already occurred.

In one new supermarket development using this voltage, according to Spence, signs had already been erected before the electricians learned that the 265/460-volt system was in use. The signs had to be dismantled and completely reworked at considerable expense, which more than offset the savings which had been expected with the higher voltage, Spence told the group.

Careful Planning Must Precede Decision

Careful planning must precede the decision to go to this higher voltage, however, Fisher conceded.

"The question has also been raised as to why three-phase service is not made available in all residential areas, particularly for 3 and 5-ton air conditioning installations," Fisher also commented.

"The answer is based largely on the economics of the situation . . . the main primary distribution feeders are three-phase 4,160, 12,470 or some similar voltage. These three-phase main feeders extend along only about 25% of the streets, alleys, or rear property lines of residential areas. The remaining 75% are supplied from single-phase primary circuits tapped from the three-phase mains; consequently, three-phase service is not available in these areas," Fisher said.

"The cost to extend additional primary phase wires is considerable; also the cost of three-phase transformers and meters is much higher than for single phase. The additional cost, per residence, to supply three phase for 3 to 5-hp. motors will vary considerably, but may run several hundred dollars more," he declared.

"Furthermore, developments in the 3 and 5-ton single-phase hermetic air conditioning units have progressed to the point that the cost advantage of the three-phase unit over the single-phase unit is barely sufficient to pay for the additional service entrance wiring and certainly not enough to justify the large additional cost to the utility unless this additional cost is covered in the rates for service," Fisher claimed.

"It is interesting to note that at least one large utility in the southwest has decided that it will no longer extend three-phase service to residential users, because of this excessive cost, unless the customer bears the additional expense. This has been the policy of our company for many years, and has received full acceptance by our customers.

Very Few Residential Customers Use 3-Phase

"Only a small fraction of 1% of our residential customers have installed three-phase equipment on this basis. We have supplied service to single-phase motors up to 7½ hp. size and single installations consisting of as many as four 5-hp. units, without difficulty. Multiple units are often considered desirable because of 'zone' control available in such installations," Fisher said.

"Other problems that you may occasionally run into are those brought about by abnormal voltages on the equipment you have installed, or are maintaining in residences or commercial premises. This is also a problem for the utility. All power companies strive to maintain adequate voltage to all their customers since good service sells more kilowatt hours and results in better customer relations. However, there are practical limitations to electrical circuits which inherently cause variations in voltage.

"All power circuits offer resistance to the flow of power current which results in reduction in voltage. As mentioned earlier, voltage regulators are provided in the distribution substation to compensate for voltage changes brought about by changes in load on a feeder, however, there will necessarily be changes in voltage level at different points along the feeder. Additional voltage loss occurs in transformers, secondary mains, services and even in the customer's wiring," Fisher explained.

"A certain amount of such voltage loss is unavoidable; however, it is minimized and kept within acceptable limits on a very large percentage of the average utility system.

Voltage Drop Often In Customer's Wiring

"It is the practice of utilities to investigate complaints, check the voltages to determine their adequacy and take such corrective actions as may be necessary as soon as it is practical to do so. Although this is not intended as an 'alibi,' our investigations often show that our voltage is within acceptable limits at the customer's service entrance, but that the voltage drop in the customer's wiring is sufficient to cause trouble," he said.

"As most of you probably know, the acceptable voltage limits of electrical utilities are prescribed by public service commissions, or other public authorities. In our area the Missouri Public Service Commission limits for lighting service, under normal operating conditions, are approximately 6% above or below the nominal or standard voltage of 120 volts. Although power voltage is permitted by commission rules, to vary by plus or minus 10%.

"As an example of the problems that plague the utility, we need only to refer to the 'heat storms' that occurred during the summers of 1953 and 1954 throughout the southwest and in the St. Louis area. During these extended hot spells, our customers purchased room coolers and central air conditioning units by the thousands. These were installed, usually without notification to the company, in such numbers that substations and lines were seriously overloaded and hundreds of transformers were burned out.

"Thousands of customers were out of service or experienced seriously low voltage while construction crews worked long overtime hours installing new transformers and stringing additional lines.

"Our continuous construction program of system additions has practically eliminated any possibility of a similar occurrence in the future. We are also receiving very good cooperation from the air conditioning and electrical contracting organizations."

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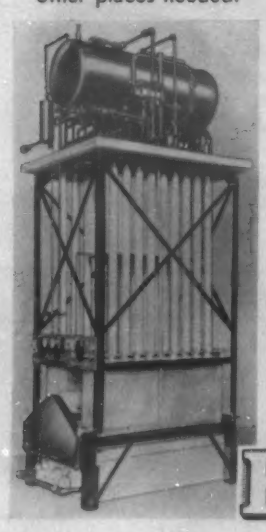

TYPICAL COMMENTS BY SHELL-ICE USERS . . .

Ice Plant Owner—"Can't keep up with demand, many customers have given up idea of buying own ice machine since using Shell-Ice. Cut labor costs 75% for making ice."

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Heating & Cooling With Water

Results of Research over Past 18 Years Summarized In U. of Illinois Report

A cooperative research program in steam and water heating and summer cooling has been carried on at the University of Illinois since 1940. This program has been carried out under the terms of a cooperative contract between the Institute of Boiler & Radiator Manufacturers and the University of Illinois Engineering Experiment Station.

A summary outline of some of the results of the research has been compiled by W. S. Harris, M. D. Eide, and R. D. Barkman of the University of Illinois. Since this concise and informative material may prove useful to those involved in installations of this type of equipment, the summary is being published in a series of instalments in the NEWS. This is Part 3. Parts one and two appeared in the Oct. 6 and Oct. 27 issues, respectively.

Heat Distributing Units

1. Object: To compare the performance characteristics of small tube radiators, type R radiant baseboard and type RC radiant baseboard as determined by tests in the Research Home.

2. Results:

Research Home

a. Both type R and RC radiant baseboard produced smaller floor-to-ceiling air temperature differences than did small-tube radiators. Furthermore, the tests indicated that the more nearly the heating units extended over the entire length of exposed wall, the warmer were the floor temperatures produced.

b. No noticeable drafts across the floor were produced with any of the types of radiation tested.

c. From the 60-in. level to the floor, the surface temperature of all walls along which radiant baseboard was located was above the air temperature, whereas this portion of the wall was below air temperature when recessed small-tube radiators were used.

d. The radiant baseboards were clean in operation. Faint dirt patterns were observed on some of the walls above the type RC radiant baseboard after one year of operation; however, curtains hanging at windows under which radiant baseboard was located were as clean at the end of a heating season as similar curtains hanging at windows under which there was no radiation. Neither were in need of cleaning.

e. No appreciable difference in fuel consumption could be attributed to the inherent characteristics of radiant baseboard.

f. Room-air temperature variations are affected by the length of the operating cycle of the burner and circulator. From the standpoint of uniform room-air temperatures, short and frequent cycles of operation are preferable to longer, less frequent cycles.

g. The hot-water heating systems used in these tests responded quickly to sudden changes in load, thus maintaining constant room-air temperature even while the outdoor temperature was changing rapidly.

h. Lower floor temperatures and higher ceiling temperatures are produced when baseboard is installed at the ceiling instead of at the normal floor location.

i. Radiant type baseboard may be used at the ceiling where there is not sufficient space along the outside walls at the floor level; convector type baseboard located at the ceiling may produce excessively warm ceilings. Ceiling baseboard should be located at the outside walls.

j. Radiators should be located adjacent to the points of highest heat loss from the room, that is, exposed walls and preferably under windows.

k. The distribution of heat within the room and fuel consumption are both more dependent upon the installation and method of operation of the heat distributing unit than on the design of the unit itself.

l. The floor-to-ceiling temperature difference produced by a heat distributing unit depends upon the location of the unit in the room, the physical dimensions of the unit, the rate of heat emission per ft. of length, and the method of operation.

m. Cast iron heat distributing units produced the smallest variation in room-air temperatures at all levels.

n. The type of heat distributing unit did not affect the mean radiant temperature at the center of the room.

Basementless House

o. Radiant baseboard is particularly adapted to maintaining comfortable floor temperatures in basementless houses as long, low units of this type cover a large percentage of the length of the exposed walls.

p. Floor surface temperatures at the center of the room where always comfortable; and wherever radiant baseboard was installed, temperatures near the edge of the floor slab were slightly higher than at the center of the room.

q. Where no baseboard was installed, floor temperatures near the outside walls of the basementless house were considerably lower.

Laboratory

r. In general, a long, low thin radiator has better performance characteristics than a thicker, shorter and higher radiator.

s. The use of a properly designed enclosure or shield on a tubular or column type radiator results in a gain in economy, and equal or more satisfactory air temperature conditions in the room as compared to those obtained with the same radiator unenclosed.

t. Painting a radiator or enclosure with an oil paint, irrespective of the color of the paint, has no material effect on the heat transmission as compared with that for foundry finish or oxidized iron. However, the use of bronze paints on tubular radiators reduces the heat output rates by approximately 7 to 9%.

(To Be Continued)

Military Installations Get Peerless Furnaces

INDIANAPOLIS — Peerless sectional gas-fired furnaces have been selected for a large new military personnel housing project, presently under construction at the Redstone Arsenal missile center, Huntsville, Ala., according to Harold W. Mutz, president of Peerless Corp. here.

Flint Refrigeration Service, Birmingham, Ala., heating contractor, will make the installation using 316 Peerless "Dixie Aire" furnaces. According to the manufacturer, the units are designed with extra large air capacity specifically for use in conjunction with summer air conditioning which can be added.

It was also announced that McKee & McHale, Philadelphia heating contractor, has chosen the Peerless POD-75 oil-fired downflow furnace to provide heating for a new 1,100-unit housing project at the Marine Air Station, Beaufort, S. C.

"The POD-75 operates at air conditioning static pressures and is equipped with year-round thermostat and downflow evaporator housing so that air conditioning can be added."

WHAT . . WHEN . . WHERE

American Society of Refrigerating Engineers Meeting
Dec. 1-3, Roosevelt hotel, New Orleans.

National Heating & Air Conditioning Wholesalers Convention
Dec. 1-3, Statler hotel, Cleveland.

National Warm Air Heating & Air Conditioning Association Convention
Dec. 4-5, Statler Hilton, Cleveland.

Institute of Appliance Manufacturers Meeting
Dec. 7-9, Statler-Hilton hotel, Dallas.

Dairy Industries Exposition
Dec. 8-13, Navy Pier, Chicago.

National Association of Home Builders Exposition
Jan. 18-22, Chicago.

Industrial Heating Equipment Association Meeting
Jan. 19-20, Cleveland.

International Heating & Air Conditioning Exposition
Jan. 26-29, Convention Hall, Philadelphia.

Home Improvement Products Show
Feb. 4-6, Coliseum, New York City.

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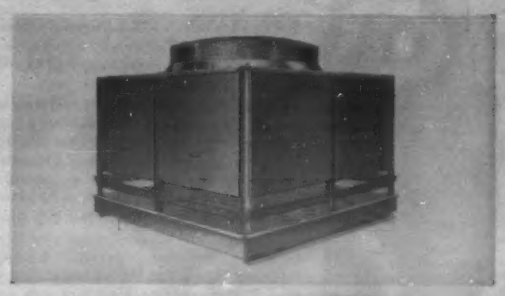
IMPORTANT NEWS FOR COOLING TOWER BUYERS

Dover "Packaged" Cooling Towers Join Famous Pritchard Line

J. F. Pritchard & Co. of California and Dover Manufacturing Company merged October 1 to offer one of the most complete ranges of cooling tower sizes and types in the industry. Dover's line of "packaged" towers plus Pritchard's field-assembled towers can answer the requirements of any water cooling job. Write for catalog details.



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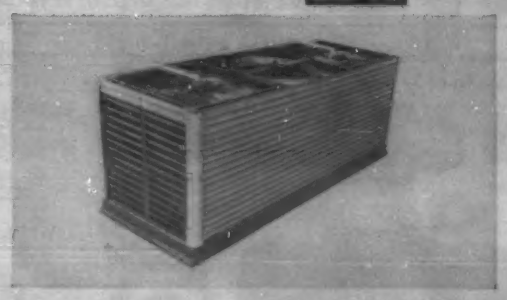

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J.F. Pritchard & Co.
OF CALIFORNIA

Report on Education

Another article in a series dealing with all levels of education and training in the air conditioning and refrigeration industry.

By Frank J. Versagi, Technical Editor

9. What and How Schools Teach

Now we take up the other half of the human element in a classroom—the teacher. If you think teachers have a talking point in students, you should hear what the reverse conversation goes like.

Vocational training—and that is what trade, manufacturers', and association schools are—leans heavily on the practical teacher, the man who has done the work himself. In fact, some schools won't hire a man unless he has previously established some reputation in the field.

Teacher Must Communicate Knowledge

Unfortunately some schools leave it at that. They hire a man who is a good serviceman, who may even know quite a bit of theory, hand him an outline of the course, then turn him loose to teach. Most often, students are dissatisfied with this type of teacher, for unless he happens to have an inborn talent for teaching, his practical background alone, will not normally suffice to make him an effective instructor.

All of us know people who know their subjects, but can't communicate the knowledge to others. In fact, this is a criticism commonly thrown at professors and professional educators by those in vocational training, without realizing that in this latter field, too, this is a real problem.

At one course the NEWS attended, the instructor was a practical man who had a fair knack for teaching, but who was more familiar with some phases of the course than others. At one point, he was discussing basic electrical theory.

Reading from a prepared script, he presented point after point rather mechanically. And, although he had welcomed questions and had handled them quite well till now, when the electrical questions penetrated the veneer of his familiarity with the subject, he became irritated at his inability to answer the questions. This happened so frequently during the electrical portion of the course that students were heard to remark, "Why didn't they get an electrician to teach this part of the course?"

Many practical teachers know their manipulative skills and their theory but have no knowledge of teaching techniques. Quite a few people hold that if a man knows something, he doesn't need any special training to tell him how to teach others, but this doesn't work out too well in practice.

Professional Teachers Rate High With Students

In fact, of the five teachers termed most effective by students and by our own evaluation, during our preparation for this series, three were or had been professional teachers, and two were practical servicemen who had taken teacher's training.

There is a tendency, also, for those schools which teach manipulative skills to the exclusion of academic subjects to be staffed by practical-type teachers. Some of the effective factory school teachers are salesmen, engineers, or servicemen who have learned teaching techniques by trial and error.

Without realizing it, students are measuring the ability of the instructor to reach and teach them when they make such statements as, "Boy, he sure knows his stuff," or "I know as much as he does," when they think they are actually measuring his knowledge.

What Students Expect

Instructors in whose classes the NEWS sat repeatedly asked, "How did I go over; do you think the fellows like me?"

And since part of our coverage included talking with students at every school we attended, we have some answers to what students like and dislike—although we do not say that what they like is necessarily good for them.

Generally, students like the teacher who:

has an obvious command of his subject matter;

has developed the ability to communicate in a friendly, yet positive manner;

pays attention to individuals in the class;

handles questions effectively;

holds himself just a bit aloof from his students.

This last point may seem surprising without explanation. A complaint registered with fair frequency is that the teacher tries too hard to become one of the boys. We already mentioned the excessive Dale Carnegie approach, but specifically, most students resent the instructor who feels called upon to trade vulgar remarks with students who thrive on such fare.

They resent the teacher who insists on pointing out that he, at one time, was just a serviceman like themselves—or just a salesman, or just a student.

Their respect is greatest for the teacher who, without sternness or harshness, can nevertheless hold his discussions and presentations a little above them. For want of a better word, the students respect dignity, and they make this readily apparent when they are asked to evaluate teachers.

Knowledge of his subject and ability to communicate we have already touched upon.

Some Teachers Ignore The Individual

Attention to individuals is something which many instructors accomplish very well but which quite a few accomplish not at all.

There was one public trade school we covered in which the instructor, working with a beginning class of lower than high school level, aimed his instruction at a common level and never left it for any individual. While the teaching itself was moderately effective for most of the group, those slower individuals who needed help and those advanced people who could have used extra work or supplementary reading were completely neglected.

Even in the shop section of the course, the instructor would give general instructions then leave the class to themselves.

This Instructor Didn't Forget the Individual

On the other hand, in several classes at Milwaukee School of Engineering, group assignment and group level discussions did not prevent instructors from working with students as individuals both during and after class.

In one class, for example, the students were given a problem in ductwork layout for air conditioning a multiple story building. One of the older students, who was already in the field, wanted to lay the job out with a double duct system, but the teacher instructed him to choose one of several other systems. After teacher and student had talked the problem over, the student explained to the NEWS that the company for which he worked was partial to double duct systems, and he could have done such a layout blindfolded.

The teacher, however, recognized that the student would realize more benefit from designing a system with which he was not so familiar, and he insisted on this in spite of the fact that it would have been easier on both teacher and student to do the double duct system.

Illogical as it may at first appear, the student complaint of not enough individual attention came from small classes, such as in manufacturers' courses, as well as from larger classes found in trade schools, public schools, and association-sponsored clinics.

(To Be Continued)

Readers' Comments—and Questions

"I am soon to be separated from Naval Service, and I desire to continue by education, especially in Air Conditioning and Refrigeration. I am seeking the names of any of the larger companies that have employe training and higher education in this field.

Russel G. Gramer PN2
U.S. Naval Air Station,
MIRAMAR
Administration Dept.
Miramar 45, Calif.

* * *

"We would very much like information on private trade schools and technical institutes offering work in this field."

Roland G. Ross
Dept. of Public Instruction
Des Moines, Iowa

* * *

"It would be most helpful to us if you would provide us with results of your studies, especially if you have information on the Western states."

Von H. Robertson
Dept. of Public Instruction
Salt Lake City

* * *

"All this excitement over education is phoney. We have too many educated people in this country already, and nothing for them to do."

Anonymous

* * *

"May we receive copies of your articles on education when publication is completed?"

Aurora W. Pucillo
State Board of
Private Trade Schools
Harrisburg, Pa.

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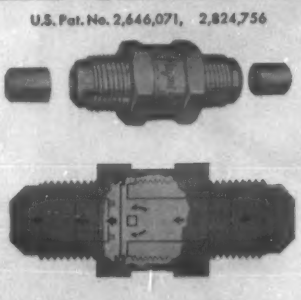

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Refrigeration Problems
And Their Solution
(As Written by Paul Reed)

Blower or Suction Fan for Condenser

QUESTION:

Will you please explain why a "blowing" type fan is used on quite a few air-cooled units used in beverage coolers, display cases, etc.? I have had occasion to work on some of them and upon checking them over, I have found hot condensers, hot receivers, hot liquid lines, and high head pressures.

On one hermetic unit in particular, on which I found these conditions, and very little air going through the condenser, I replaced the blower fan with a suction fan of the same size, which I happened to have, that fit the fan motor shaft.

At once, my troubles were over; the head pressure went down, and the condenser, receiver, and liquid line cooled off and the running time was much less. That was four months ago and I have not heard from that customer since.

I ran across another one the other day using a ½-hp. unit equipped with a blower fan on the condenser. It runs practically all of the time, condenser, receiver, and liquid lines are excessively hot. All of the electric wiring is in bad shape, apparently due to the excessive temperature.

I turned the fan around to see if it would suck air through the condenser, but it still blows, and everything still runs hot. The condenser is clean.

ANSWER:

In the two cases you refer to, the condenser is probably too close to a wall or other fixture, so that the circulation of air is bad. There may be other causes also, but from your description, it appears that pulling the unit away from the wall should help a great deal.

If this is impractical, or what is even more unlikely, if you cannot turn the fixture around, you could perhaps improve operation by using a suction fan instead of the blower fan.

The choice between the blower type or suction type condenser fan on an air-cooled unit is governed by several factors that may more strongly influence the decision than any actual inherent advantage of either the blower or suction fan.

A fixture manufacturer usually finds it better to use one make of condensing unit on all or most of his models, for it simplifies his buying and stocking of units, he probably buys at a better price, he has a better chance on deliveries, and last but not least, it simplifies his field service and parts problems. Thus, the fixture manufacturer is somewhat limited by the models available from his condensing unit supplier.

Service accessibility plays a part also. For example, a self-contained display case with the unit in a compartment on one end of the case may have the service valves and the control, accessible from only one side of the unit. Using a suction fan might require turning the side having the service valves and control on it, toward the fixture and away from the accessible end of the fixture where the removable service panel is located.

Therefore, the case manufacturer may choose a blower-type fan so that the unit can be placed in the compartment in such a position that the service valves and the control are accessible for service.

FIXTURE MANUFACTURER SOMETIMES LIMITED IN CHOICE

Where to blow the air often presents a problem. If a suction fan is used, its exhaust may blow out into an aisle on to the customers, so the manufacturer may choose to blow it out the back with a blower-type fan. It is not always an easy decision for the fixture manufacturer, and he may have to compromise between the ideal and what appears to be the most practical solution.

Moreover, the user may disregard the fixture manufacturer's instructions as to air circulation. Despite the manufacturer's instructions, the user may cause the fixture to be pushed tightly against a wall, or up against another fixture.

It must be admitted, however, that all fixture manufacturers do not always use the best of judgment in all their designs. They may underestimate the undesirable effects of too little room for air circulation or of blowing the condenser air against an adjacent wall. Or they may be over-influenced by cost considerations.

SUCTION FAN HAS ADVANTAGES

The relative merits of suction versus blower fans on air-cooled units can get one plenty of arguments, one way or the other. Nevertheless, the advantages of the suction fan appear to outweigh those of the blower fan.

The suction fan tends to create a partial vacuum on the fan side of the condenser, causing the air on the other side to flow through the fan to overcome this partial vacuum. In doing this, the air beyond the condenser tends to flow rather uniformly; that is, it tends to flow through the entire face of the condenser about the same—the corners of the condenser as well as the central part.

On the other hand, the blower fan tends to blow air through a doughnut shaped area of the condenser. It is characteristic of a propeller-type fan that it does not move much air around the inner ends of the fan blades nearest the shaft, and of course, the blower fan moves little air through the corners of the condenser.

Thus, although the blower fan may move as many cubic feet of air per minute through the condenser as a suction fan of equal size, the air is not evenly distributed.

The design of the blades has an important bearing on the air distribution. Some types of blades move more air through the area around the shaft than others, and consequently get better distribution of air through the condenser.

(To Be Continued)

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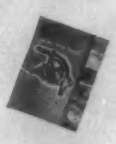

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NCRSA Members Urged To Become Supermarket Experts--

(Concluded from Page 1, Col. 5)

in the commercial refrigeration and air conditioning business is better and brighter than ever before—if we are ready and qualified to assume the responsibility and do the job."

He cited a survey that showed that percentage of manufacturer sales through distributors has changed little and even shown a slight improvement. "But," he noted, "the percentage was held by sales improvement among the top ranking and qualified distributors."

He questioned whether the small distributor will be able to remain in the "big business" picture that supermarket refrigeration and air conditioning business has become.

"It is my suggestion," he said, "that the small distributor should take inventory of himself. Maybe he should expand his efforts with more sales personnel, study merchandising techniques, and bring his thinking and services offered to the plane of today's operation."

Supermarket Operator Gives Customer's View

Bernard Stevens, Miami supermarket operator, presented a customer's viewpoint.

"Gentlemen, we could employ a staff of engineers to substitute for the local distributor in planning for new stores and handling the installation and maintenance of the equipment in each unit. But I am convinced that the expense involved in this program would be unbearable.

"Because of this we charge the local representative (distributor) with these responsibilities. (He doesn't always accept them, however, Stevens added aside).

"No matter how good a staff we could employ, it would still not be able to cope with the different kinds of equipment we purchase as efficiently and economically as the distributor's personnel. . . . They would not be as well prepared to face a particular problem as would your crews."

E. B. Ward, South Bend, Ind. distributor, advised his compatriots in NCRSA that "we are no longer sales distributors. We are distributor contractors."

Study Shows Direct Purchase Is Not Always Least Costly

He pointed out that supermarket operators, looking for ways to cut costs, are naturally susceptible to the direct selling sales pitch. But, he said, a study of lost sales to direct purchase market jobs has determined that his packaged price was as low or below the final installed and serviced price paid by the operator.

To get this lost business, he urged distributors to gear their organizations to low cost selling and distribution. They must offer and supply, he asserted, a complete line of food market equipment to complete the store from front to back door, and have properly trained personnel.

Donald Denny, distributor from Dayton, who told how he created and sold new customers on complete new stores, put it this way:

"Our product today is not selling a meat case, or a vegetable case. It is selling a program—whether it be a complete new market or a remodel job.

"We must know merchandising, advertising, buying, leasing, building, parking lot arrangement, so well that when we have the deal our customer is not primarily concerned with what brand of case, shelving, or other equipment he is getting. He must believe that we know what we are doing to the point that we have the best available to supply him with."

Don Petrone, president of Typhoon Air Conditioning Co., a division of Hupp Corp., declared that the buyer's emphasis today is not the cheapest price, but rather where can be get the most value for the dollars he spends.

Don't be afraid to add a normal profit to each supermarket estimate, he advised.

Operators are "seeking alert, aggressive companies because their common complaint is that they have had to do much of the progressive thinking themselves when it came to store equipment planning and layout," he said.

"You will find them eager to turn the design problems of future stores over to you once you have shown them the capabilities of your organization."

In urging commercial refrigerator distributors to include air conditioning in their repertoire of products, he pointed out that more money will be spent this year for air conditioning in supermarkets than any other segment of retail business.

"In 1957," he said, "over 3,000 supermarkets were air conditioned at an expenditure of $40,500,000. Present indications show that they will exceed this expenditure in 1958."

Delegation of Authority Vital To Expansion

Milton I. Schwartz of New York City, newly-elected president of NCRSA, advised the distributors that there is no time like the present to reorganize for growth. Organized planning, he asserted, will eliminate disturbing influences later.

He suggested that to expand, the distributor should prepare to delegate authority, develop business controls, develop managers for new departments, and give the changes time to work themselves out.

Wilbur Hoyt, owner of Hoyt Refrigeration, Inc., in Lecompte, La., warned that improper management of cash has proven the downfall of many an otherwise successful business. No other phase of business is as important as cash turnover.

He urged distributors to always take their discounts, get a daily cash report from their bookkeeper, buy proper insurance, retain enough profits in the business for growth, avoid tying up working capital in fixed assets, and meet their banker twice a year whether they need money or not.

A new feature of the convention that won plaudits from the audience was a series of round table discussions. Groups of 10 men huddled around tables to discuss one of four topics—delivery, installation, and service; hiring, training compensating, and directing salesmen; engineering and store planning; and diversification of lines.

After the men exchanged ideas on the problem before them for an hour, the moderator at each table made a brief report to the convention as a whole.

Only complaint was that time allotted was too short.

In two panel sessions, distributors and manufacturers aired their views on when to accept and when to reject the marginal sale and on keeping salesmen informed and inspired.

Consensus was that marginal sales should be rejected when no profit can be made, though one distributor contended that they were justified if necessary to maintain a volume operation.

Daily morning sales meetings and frequent mailings of product and inspirational literature were recommended for keeping salesmen inspired and informed.

George Wiedemer, past president of NCRSA, reported progress for NCRSA's and CRMA's joint relations committee of distributors and manufacturers of commercial refrigeration equipment.

Direct selling by manufacturers to the user was the most discussed problem, he said. Progress was indicated by the fact that manufacturers are now willing to discuss it, where they hadn't been in years past.

The committee has recommended, he said, that manufacturers point out to voluntary chains the advantages of buying their equipment through a local distributor.

New president of NCRSA is Milton I. Schwartz of S. & M. Schwartz & Co., New York City. Ray Winther of the Ray Winther Co., San Francisco moved up to first vice president; Dudley M. Cawthon of Dudley Cawthon, Inc., Miami to second vice president; Donald D. Denny of Modern Market Fixtures, Inc., Dayton, to third vice president; and E. B. Ward of Baker-Ward, Inc., South Bend, Ind. to treasurer.

New directors elected to three year-terms were James A. Scatena of Scatena-York Co., San Francisco; Wilbur S. Hoyt of Hoyt Refrigeration, Inc., Lecompte, La.; and Ray L. Eggert of R. L. Eggert Co., East Orange, N. J.

Aubrey Deal of Deal-Warren Co., Jacksonville, Fla. was elected to fill the directorship vacated by Phil Schnell of Birkenwald Equipment Co., Portland, Ore. His term expires next year.

Marie H. Lawton continues as executive secretary. Miss Lawton reported that the association added 61 new members during the past year.

Detroit Area Communities Study Reciprocal Code--

(Concluded from Page 1, Col. 5)

with an interest in reciprocal licensing has been invited to attend.

The Reciprocal Refrigeration Council came into being on Nov. 12 by the unanimous vote of 16 representatives of seven Detroit area communities, two contractor associations, the sheet metal workers' local, and individual refrigeration and air conditioning wholesalers and contractors.

The seven communities represented are Detroit, Dearborn, Dearborn Township, Allen Park, Highland Park, Royal Oak, and Warren.

Temporary chairman of the council is Fred Stanley, refrigeration inspector for the city of Highland Park. Stanley issued the original call for organization of such a council in October.

At the time, he said there had been considerable agitation in the refrigeration and air conditioning industry for a refrigeration reciprocal council in the greater Detroit area to govern the licensing of refrigeration contractors.

Reciprocal licensing is not new to the Detroit area. Reciprocal electrical licensing was introduced in 1939 and reciprocal heating in 1950.

At the present time, Detroit, Highland Park, Farmington, Farmington Township, and Dearborn reciprocate on refrigeration.

Due to the lack of a refrigeration council and because of the increasing number of communities participating, reciprocity is becoming unwieldy and cumbersome, Stanley pointed out.

Constitution of the new council says its "purpose shall be the consideration of principles and practices to promote safety to life and property, to provide and recommend uniform policies to the participating communities of southeastern Michigan in the administration and enforcement of an ordinance which also provides for the uniform licensing of contractors, for the installation of refrigeration and air conditioning equipment.

The constitution sets up three types of membership. Active members are the qualified administrative or enforcement officials of participating communities.

Association members are persons representing communities interested in the activities of the council.

Sustaining members represent an industrial concern or organization interested in the manufacture, assembly, installation, design, engineering, or supervision of refrigeration equipment and all appurtenances used in connection therewith.

While all members can participate in discussion, only one representative of a community, corporation, or organization will be entitled to vote.

Temporary secretary of the council is N. J. Biddle, executive secretary of the Detroit Warm Air Heating Association. Both he and Stanley will hold office until permanent officers are elected at the first meeting of the new year. Officers will hold office for one year and will be able to succeed themselves only once.

At the Nov. 12 meeting, a code committee was set up to establish a model code to be adopted by the Council as the recommended code in this area. It was recommended to the code committee that the contractor's bond, as provided in present codes, be excluded from the draft of the model code. Such a bond is very ineffective, it was felt.

It is this model code that the Council will consider next Wednesday.

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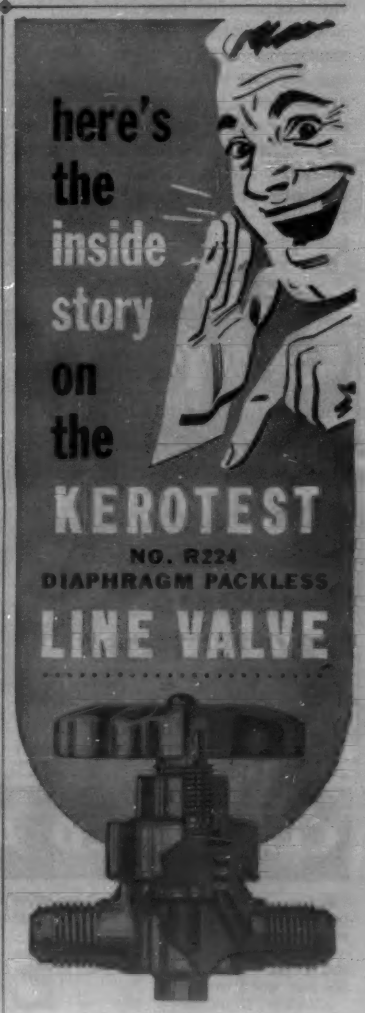

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Servicing Automobile Air Conditioners

(Vol. 3)

BY C. DALE MERICLE

CLARDY

Clardy Automobile Air Conditioning Co.
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Three models comprise the 1958 Clardy air conditioner line: the "Champion," "Clipper," and "Adventurer."

The Champion is an under-dash model (Fig. 1) employing a propeller-type fan. Clipper model is also an under-dash unit but uses squirrel cage blowers. The Adventurer model is designed for trunk installation of the evaporator case.

Clardy units follow the conventional arrangement of having the condenser in front of the car radiator, compressor mounted on the car engine and driven through a thermostatically controlled magnetic clutch, and evaporator assembly mounted beneath the dash or in the trunk.

FIG. 1—1958 Clardy under-dash unit is available in "Champion" and "Clipper" models.

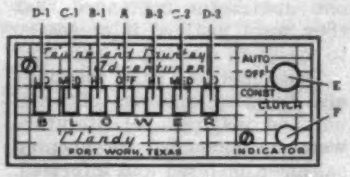

FIG. 2—Control panel of 1958 Clardy "Adventurer" trunk model. Key: A, blower off; B-1, C-1, D-1, left blower controls; B-2, C-2, D-2, right blower controls; E, clutch switch; F, clutch indicator light.

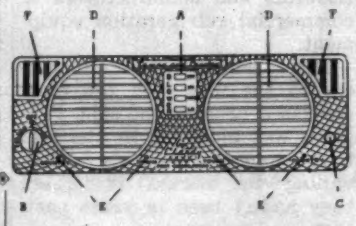

FIG. 3—Front of 1958 Clardy under-dash units showing A, blower control panel; B, clutch switch and temperature control; C, clutch indicator light; D, adjustable air outlets; E, settings for town or country driving; F, non-adjustable air outlets.

Refrigerant-12 is standard on 1958 Clardy conditioners.

Compressor

The York aluminum compressor A-209 or A-210 is employed on nearly all 1958 Clardy systems.

York Model A-209 has a displacement of 8.7 cu. in.; Model A-210 has a displacement of 10 cu. in. With the exception of the crankshaft and connecting rod assemblies, the two models are identical.

Both models may be installed in horizontal or vertical position, but each is designed specifically for right-hand or left-hand location on the car engine.

"Each compressor must be mounted only in the position (left or right) for which it was designed, because of the forced oil system," York cautions.

Right-hand models are designated as A-209-R or A-210-R; left-hand models are A-209-L or A-210-L.

Initial oil charge is 10 oz. in both A-209 and A-210 units.

Condenser

Condenser is located in front of the car radiator.

A receiver tank with sight glass is found beside the condenser. A drier is also provided in the liquid line, usually located in the engine compartment.

Evaporator

Adventurer evaporator case is installed in the trunk of the car. It houses the evaporator coil, expansion valve, and two individually controlled blowers. Air is delivered to the passenger compartment through outlets on each side of the parcel shelf. Return air intake is located in center of parcel shelf.

Champion and Clipper evaporator cases (Fig. 1) are installed beneath the dash. Each assembly houses the evaporator coil, thermostatic expansion valve, blower, and the controls.

A propeller-type fan is employed on the Champion while a squirrel cage blower is used on the Clipper model.

Most of the air is delivered to the passenger compartment through round, adjustable louvers on the front of these two models. The louvers may be rotated to change direction of air flow. Marks are provided to indicate preferred settings of the louvers for "town" or "country" driving.

Controls

Control panel of the Adventurer trunk model (Fig. 2) is attached to the dash. It includes seven pushbuttons to control blower operation, a three-position toggle switch for control of the magnetic clutch, and a pilot light to show when clutch is engaged.

Center blower pushbutton is the "off" switch. Other pushbuttons permit selection of low, medium, or high-speed blower operation for each blower. Both blowers can be used together or separately.

Clutch toggle switch has three positions. It is off in center position, on automatic operation in upper position, on constant operation in lower position.

When the clutch toggle switch is placed in "automatic" position, the clutch is cycled by a thermostat located in the evaporator case in the trunk. The thermostat is pre-set at the time of installation, but it can be adjusted in the field.

Controls of the Champion and Clipper hang-on units (Fig. 3) are mounted on the front of the evaporator case. They include four pushbutton blower controls (off, low, medium, or high), clutch pilot light, and clutch control knob. Latter is connected to an adjustable thermostat permitting occupants of car to change thermostat setting. Thermostat also has an "off" position.

A 30-amp. fuse is provided in the main electrical cable running to the unit from the accessory terminal on the ignition switch (Fig. 4) on all three of the 1958 Clardy conditioners.

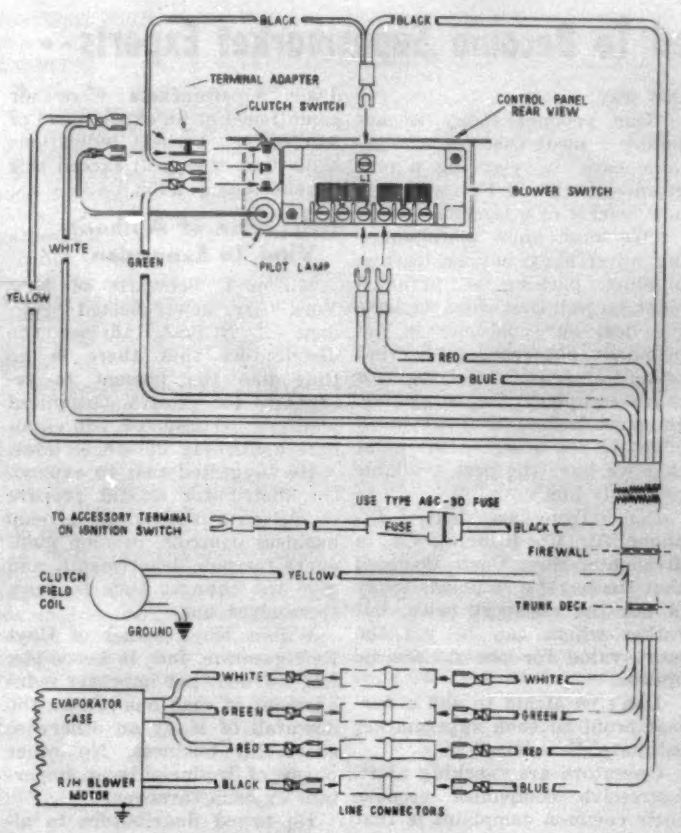

FIG. 4—Wiring diagram of 1958 Clardy "Adventurer" trunk model.

SERVICE HINTS

Evacuating System

Following initial installation or opening of system for repairs, Clardy units should be tested for leaks with a small charge of Refrigerant-12 and then evacuated before being fully charged.

The manufacturer recommends use of a separate vacuum pump and maintaining a 28-in. vacuum on the system for at least 20 to 30 minutes.

Charging System

Clardy units are charged through the low side in the usual manner with Refrigerant-12.

Charge is 2 lbs. in the under-dash Champion and Clipper models; 2½ lbs. in the Adventurer trunk model.

Trouble Shooting

The usual service complaints involved in an automobile air conditioner which is controlled by an adjustable thermostat cycling a magnetic clutch will apply to all three of the 1958 Clardy models.

The manufacturer also notes that some installers have been guilty of locating the condenser in too high a position in certain makes of cars because it is much easier to do this.

If the condenser is located too high, much of the airflow bypasses the condenser, thus sharply reducing the efficiency of the system. Poor cooling will obviously result.

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ENGINEER REFRIGERATION Controls—To head a department on design and development of commercial refrigeration control valves of all types; national corporation with midwestern manufacturing and engineering facility; salary and bonus commensurate with work background and ability. Send full details, qualifications and personal data, to BOX A6144, Air Conditioning & Refrigeration News.

MANUFACTURERS' REPRESENTATIVES for all territories East of Rocky Mountains. Substantial earnings on proven product with high list price of West Coast manufacturer, over 500 installed in Southern California. Specialty sales experience desirable with ability to establish and train direct sales organizations. Advise territory now covering and types of lines handling. BOX A6145, Air Conditioning & Refrigeration News.

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WANTED: MANUFACTURERS surplus, outdated or obsolete refrigeration items—expansion & water & shutoff valves, controls, relays, dehydrators, units, tubing, fittings, etc. All sales on a cash close-out basis, large or small quantity. Write or call: COMMERCIAL CONTROLS CO., 257 East 3rd Street, New York 9, N. Y., ORegon 3-7210.

USED AND obsolete refrigeration compressors, condensing units, valve plates and parts for York, G. E., Par, Mills, Brunner, Carrier, Universal, and others. Furnish full description as to model number, horsepower, etc. UNITED REFRIGERATION CORPORATION, 514 W. 12th Street, Los Angeles 15, California.

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MODEL HH 2 h.p. automobile air conditioning compressors tapered shaft, vertical mount, complete with flywheel $33.95. Send for free circulars and catalogs on money saving refrigeration & air conditioning parts and supplies. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

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Write John H. Spence, Service Manager, HUSSMANN REFRIGERATOR CO., 2401 North Leffingwell Avenue, St. Louis 6, Missouri. Replies held confidential.

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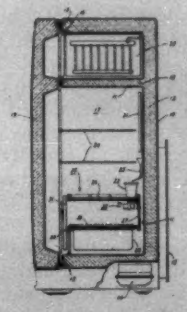
PATENTS

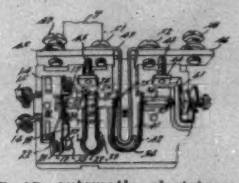
Week of Sept. 9 (Concluded)

2,851,366. METHOD FOR PRESERVING FOODS. Harold W. Schaefer, Philadelphia, Lloyd A. Staebler, Oreland, and Forrest P. Speicher, Havertown, Pa., assignors to Philco Corp., Philadelphia, Pa.



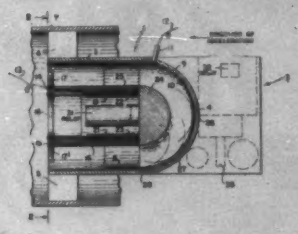
1. In a process of storing food in a moist, cool environment and over an extended period of time: maintaining the atmosphere of said environment ionized and polarized by positive atmospheric ions, substantially throughout said period.

2,851,556. AMBIENT TEMPERATURE COMPENSATED RELAY. Hermon L. van Valkenburg, Milwaukee, Wis., assignor to Square D Co., Detroit, Mich.



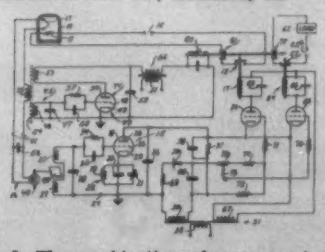
1. In an automatic electric switch, separable contacts, current responsive means for automatically effecting separation of said contacts and including a bimetallic strip bent about a transverse axis into substantially U shape, means operated by said bimetallic strip to effect separation of said contacts, and a U-shaped ambient temperature compensating means, a discrete enclosure for said ambient temperature means thermally insulating said ambient temperature means from said current responsive means, and ambient temperature means being operable upon said operated means for modifying the control of said bimetallic strip.

2,851,554. CONTROL APPARATUS. Chung Liao Feng, Philadelphia, and Robert E. Ochs, Jr., Oreland, Pa., assignors to Minneapolis-Honeywell Regulator Co.



5. A gravity compensating means for altering the time required to close an acceleration responsive switch comprising, a solid hemispherical switch contact member resiliently mounted for arcuate movement in a pair of gimbal rings that are attached to a moving mody, a hollow hemispherical switch contact member surrounding and spaced from said solid switch contact and means connected to said gimbals for guiding said solid switch contact into engagement with different portions of said hollow switch contact as said angular direction of the moving body is changed.

2,851,613. CONDITION RESPONSIVE CONTROL APPARATUS. Oscar L. Welker, Rockford, Ill., assignor to Barber-Colman Co., Rockford, Ill.



2. The combination of, a measuring circuit providing an output signal variable with changes in a condition being measured, a load circuit, first control means for varying the condition of said load circuit in response to variations of said output signal when said measuring circuit is intact. . . .

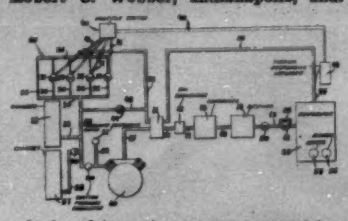
DESIGN

183,501. MOTOR DRIVEN GAS COMPRESSOR. August M. Stenger, Painted Post, and Karl M. Tietjen, Bronxville, N. Y., assignors to Ingersoll-Rand Co., New York, N. Y.

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

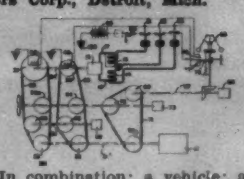
Week of Sept. 16

2,851,904. HIGH SENSITIVITY, LOW-TEMPERATURE CONTROL SYSTEM. Robert C. Webber, Indianapolis, Ind.



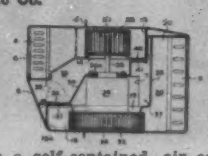
1. A refrigerating system comprising a compressor, a condenser and an evaporator, means interconnecting said compressor, condenser and evaporator to permit the flow of refrigerant from the compressor, through the condenser and then through the evaporator, means providing a passageway connecting said evaporator for the flow of refrigerant therefrom to said compressor. . . .

2,851,865. VEHICLE REFRIGERATING APPARATUS. James W. Jacobs, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.



4. In combination: a vehicle; an engine driving said vehicle and having an engine drive shaft; a vehicle space to be cooled; a refrigerating system on said vehicle and including a compressor, condenser and evaporator in refrigerant flow relationship with said evaporator cooling said vehicle space; a compressor shaft rotatable for operating said compressor. . . .

2,851,866. ROOM COOLER. Stanley E. Rose, Erie, Pa., assignor to General Electric Co.



1. In a self-contained, air conditioning unit for an enclosure comprising a housing, a refrigeration system within said housing including an evaporator and a condenser, an air distribution chamber having an air opening associated with said evaporator, a second air distribution chamber having an air opening associated with said condenser. . . .

2,851,970. CABINET ANTI-LOCK MEANS. William S. Perdon, Birmingham, Ala. Original application Nov. 2, 1954, Serial No. 467,486, now Patent No. 2,811,119.

1. An anti-locking device for refrigerator cabinets and the like having a door movable from an open to a closed position, a hollow portion in one of the cabinet walls continguous to said door, said hollow portion being defined by inner and outer walls, an opening at the upper portion of said inner wall, a removable try within cabinet. . . .

(To Be Continued)

Air Distribution Requirements In Year-Round Air Conditioning

Part 3—Fundamentals of Equipment

By Frank D. Klein, Chief Engineer, Governair Corp.

What Is the Effect of Heat of Compression on the Cylinder Mean Wall Temperature?

This effect must of course be considered AFTER that effect exerted by the circulation of refrigerant on the cylinder wall. However, if we use:

1. A Condensing Temperature of 115° F.,

2. A Return Gas Temperature to the compressor of 65° F., the average of these would be 25° F. It follows, therefore, that:

1. 25° F. plus 65° F. equals 90° F.,

which is the AVERAGE MEAN WALL TEMPERATURE due to the total heat of compression of 1,540 B.t.u. as found in the previous calculations.

The 90° F. temperature represents the heat brought about by the cycle of compression. If this temperature was the only inherent heat generated, to require dissipation by some form or another, it would take a surrounding atmospheric ambient (or a created one) of less than 90° F. to cause heat transfer to take place between it and the compressor body.

What About the Heats of Friction as an Additive?

Most certainly there are additional heats to be added to this 90°, which must be compensated for as outlined before, by lubrication and/or cooling or dissipation through some method suitable to the design. That which cannot be compensated for must become a part of the total value for ultimate dissipation by the environmental ambient.

These additional heats arise through the working friction of internal members and accessory equipment. Such so-called "accessory equipment" embraces mechanically cylinder unloading devices for step capacity control, or "capacity reduction."

Consider what happens in reducing the capacity of the compressor with such devices.

A normal compression cycle is interrupted in sequence by lifting the suction valve and holding this valve open on the discharge stroke. As a result the refrigerant gas escapes through and in turn returns to the suction line without benefit of compression.

Now in addition to the small, but still significant, amount of added heat due to the operation of the device within the compressor, the still greater heat is added by the fact that no compression takes place in the inactive cylinder.

As a result, a lesser amount of gas is volumetrically handled and made available which would otherwise lend itself to the normal cooling effect it has in normal cycle operation.

The small, "but still significant," added heat from friction, added during the capacity unloaded cycle arises from other frictioned parts of course. However, the one to consider most is that effect incurred by the operation of a crankshaft in what can be considered an unbalanced condition.

This point is still a highly controversial one, yet actual test data confirms the definite generation of a heat-of-friction and the fact that crankshafts in multicylinder reciprocating compressors, when staged off in capacity by cylinder unloading, operate unbalanced.

The Relationship of Rate of Heat Transfer In the Condensing Cycle to Volumetric Efficiency. (Water Cooling only.)

The Volumetric Efficiency of a compressor is directly related to and is dependent on the Rate Of Heat Transfer provided.

The Water-Cooled Condenser, for example, performs the mission of:

A. Accepting for conversion, the hot gas discharged to it by the compressor, from vapor to liquid.

B. Removing the Heat Of Compression imparted to and absorbed by the refrigerant gas.

C. Removing from the refrigerant gas, the Latent Heat of Condensation in order to provide a continuous supply of liquid refrigerant to the Expansion Valve which in turn is metered to the evaporator.

In order to accomplish and maintain the proper volumetric efficiency of the compressor these things must be accomplished both quickly, in sequence, and economically.

The Rate Of Heat Transfer In the Condensing Cycle must be accomplished by:

A. Removing the heat of compression and rejecting it on the basis of the required B.t.u., per minute, per ton of net refrigerating effect involved.

B. Offering to the condensing operation the necessary heat transfer surface in direct relation to the speed of the rate of heat transfer required.

As a result, the Rate Of Heat Transfer required in the Condensing Cycle is *Directly Proportional to the Area Perpendicular to the Direction of Heat Flow And to the Temperature Differential Between Refrigerant Gas And Water As the Media.*

Of What Practical Value Is the Observation and Maintenance of Volumetric Efficiency and How May It Be Done?

What follows embodies all of what has been said and written here quickly and with direct reference, but without detail. The details thus required in answer to this question must follow a chronology. Previously explained have been such terms as Superheat, Latent Heat of Vaporization, Net Refrigerating Effect, Heat Content of the Liquid Refrigerant. It is these that are directly involved in answering the question posed.

Primarily, and in addition to the explanation of Volumetric Efficiency in a compressor given in the preceding text to accomplish the fullest capability of a compressor through its Volumetric Efficiency, is to eliminate the initiating failure of a system to perform properly. The compressor is the "heart," thus it must perform capably or other components of a system cannot perform.

Refer once again to the Mollier Chart, for the particular Refrigerant, as a means of understanding of "what is going on" when investigation for performance of a system is involved and the compressor and its action on the refrigerant becomes the first important consideration.

The Mollier Chart was used as a point of reference in obtaining needed information in our discussion related to the Total Heat of Compression. It performs many more functions that answer the question on Volumetric Efficiency in general, for instance, and by chronology.

In Direct Expansion Evaporator Systems We Are Usually Concerned with Coil Temperature and the Temperatures of the Leaving Air. (Cooling Cycle.)

This is naturally of primary concern as it is directly related to malfunction in a system.

Taking the normal steps of investigation we become, therefore, immediately concerned with the Total Heat Load on the forced air evaporator.

(To Be Continued)

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Reply Box No. A6143
Air Conditioning & Refrigeration News

RSES To Consider Heating Men for Full Membership--

(Concluded from Page 1, Col. 4)

on its silver anniversary by George Jones, managing director, Air-Conditioning & Refrigeration Institute. Presenting the society with a plaque commemorating its 25 years of "distinguished service," Jones commented on the active cooperation between his manufacturers' group and the service organization. According to Jones, ARI is "considering a means of aiding the RSES Study Course program."

Dr. Walker Given Paul Reed Award

Dr. Walter O. Walker, Dean, Div. of Research and Industry, University of Miami, presented President A. E. Manning with the "Paul B. Reed Memorial Award."

Donated anonymously, this plaque will remain the permanent property of RSES. Each year, however, the winner of the Reed award shall receive a replica of the plaque, and his name will be inscribed on the permanent memorial. For the 1958-59 season, the first award will be offered to the chapter which has the highest percentage of certificate members in its total membership.

Certificate members are those who have passed a certifying examination given by the society education examining board.

Education's Importance Emphasized

President A. E. Manning emphasized the importance of education in the society's work. "The Study Course Program has been responsible for a substantial portion of our increased membership—a net gain of 718, bringing total membership to 9,967.

"Let us always remember that the primary reason for our foundation and our present chief objective is the education of our members," he repeated.

On the subject of finances, Manning recommended that the RSES insurance program give no dividends until reserves equal one year's premiums and one year's operating cost. Further, he suggested that the society adopt the philosophy of building cash reserves, rather than that of spending all the money made each year.

McDermott, in his address, pointed with pride to the recent Federal legislation having to do with safety opening devices inside refrigerator doors—largely a result of work and promotion by RSES.

"The job is only partially done," he reminded. "Refrigerators with these new devices have just begun entering the homes. Old ones without them will be discarded for years."

A brief code of ethics was adopted which sets professional level goals and conduct for servicemen.

Mfrs. Aid 'Speakers Bank'

John Spence, educational director, announced that the society has received splendid cooperation from manufacturers in setting up a "speakers bank." RSES educational office has a file of available speakers from which local chapters can make requests.

George Klahn, San Diego, Calif., was elected president of RSES for the coming year. Denver Watham, Tulsa, Okla., was elected first vice president, and Paul Darby, Tacoma, Wash., second vice president.

Other officers elected were: H. T. McDermott, secretary; Charles G. Bell, Fresno, Calif., treasurer; John Spence, St. Louis, educational director; Carl F. Howenstine, Canton, Ohio, sergeant-at-arms.

Elected to the board of directors for two-year terms were: Carl W. Price, Knoxville, Tenn.; A. J. Lane, Raleigh, N. C.; J. Lawrence Hall, Nashua, N. H.; Michael Rudka, Oshawa, Ont., Can.; and Otto Grossman, Newark, N. J.

For the 1960 annual convention, bids were received from Portland, Ore.; Tulsa; Reno; Miami; Buffalo; Houston; and Dallas. The '59 convention will be in Atlantic City in conjunction with the All-Industry Show.

Seven members were awarded plaques commemorating their 25 years of membership in RSES. They are Irving Alter, Chicago; C. A. Brunton, Huntington, W. Va.; James H. Downs, Cleveland; H. A. Goldberg, Chicago; Israel Kramer, Trenton, N. J.; E. A. Plesskott, St. Louis; and H. T. McDermott, Chicago.

The educational sessions were highly attended with audiences of 200-300 for each talk.

Reports on the educational discussions will appear in subsequent issues of the NEWS.

Obviously moved by displays of affection at the business meetings, McDermott announced almost in a whisper, "Let the record show there is a tear in McDermott's eye."

Tears of joy were even more generally distributed at the convention banquet where the surprised secretary received gifts estimated at $2,500 in appreciation of his 25 years as unsalaried secretary of the society. Gifts included a "Dictaphone" dictator and transcriber, a patio grille, two round-trip tickets for Mac and his wife to Mexico City, and a $500 cashier's check.

"Anything I say now will be totally inadequate," choked the stunned secretary.

FHA Compiles--

(Concluded from Page 1, Col. 4)

and material producers.

Copies of the new MPS have been sent to all FHA district offices for study. This month, chief architects from FHA's 75 insuring offices will be briefed on them. By the time of the National Association of Home Builders convention in Chicago in January, Mason expects that enough copies of the MPS will be available to serve the entire building industry.

Mason said that he is making no promise of April 1 as the effective date of the new standards. He asserted that FHA wants to be certain everyone in the industry is acquainted with them before a transition is made from present requirements.

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